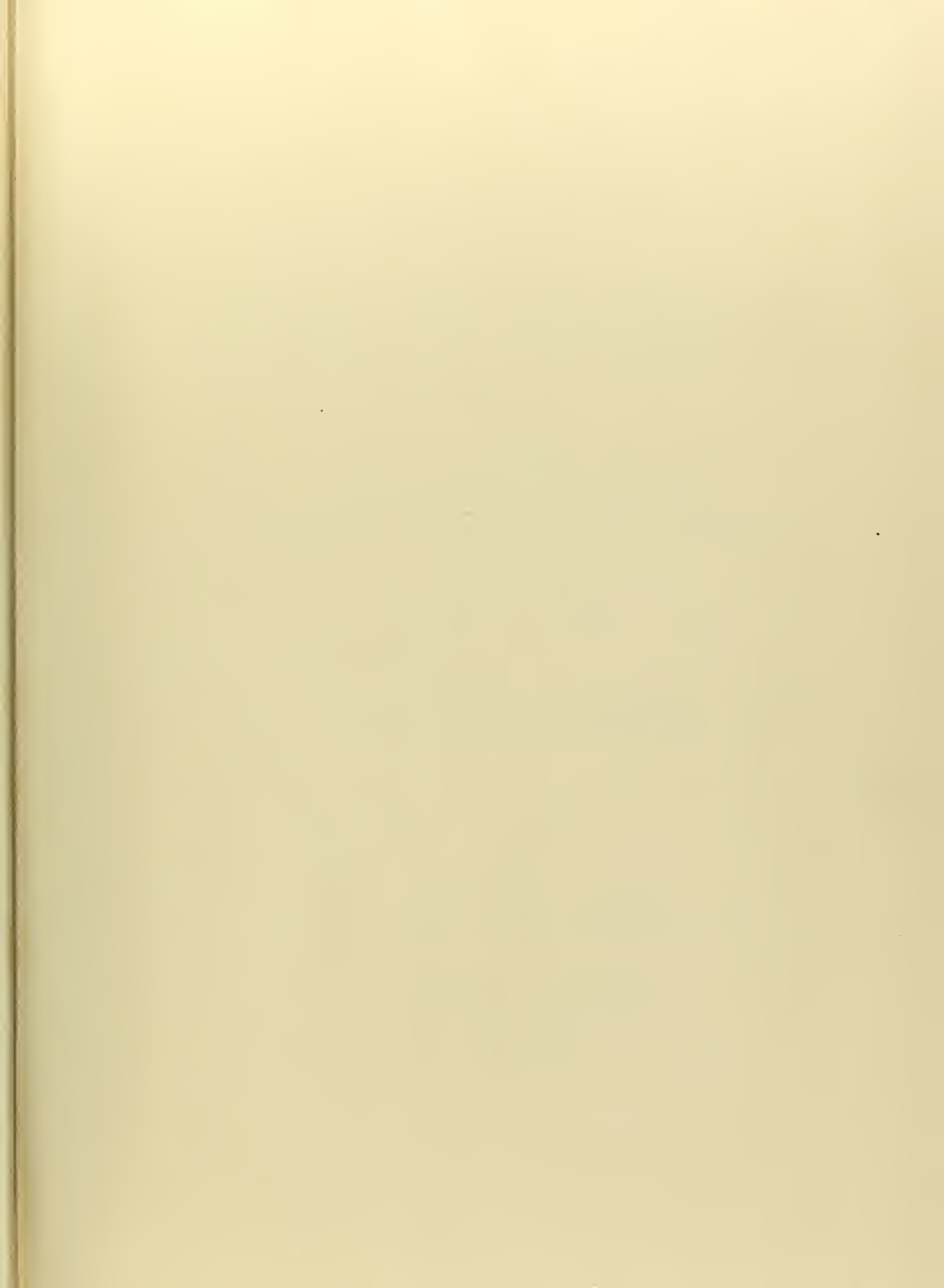


ADMINISTRATION OF THE BENEFICIAL
SUGGESTION PROGRAM FOR
CIVILIAN PERSONNEL EMPLOYED
BY THE UNITED STATES NAVY

BY
RALPH VINCENT WILHELM

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NORTHWESTERN UNIVERSITY

ADMINISTRATION OF THE BENEFICIAL SUGGESTION PROGRAM
FOR CIVILIAN PERSONNEL EMPLOYED BY THE UNITED STATES NAVY

A THESIS

SUBMITTED TO THE GRADUATE SCHOOL

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

for the degree

MASTER OF ARTS

DIVISION OF CORRELATED STUDIES

BY

RALPH VINCENT WILHELM

EVANSTON, ILLINOIS

JUNE 1950

UNIVERSITY OF CALIFORNIA

Thesis
W588

PHYSICS DEPARTMENT
UNIVERSITY OF CALIFORNIA, BERKELEY
BERKELEY, CALIFORNIA 94720-7300

PHYSICS DEPARTMENT
UNIVERSITY OF CALIFORNIA, BERKELEY
BERKELEY, CALIFORNIA 94720-7300
TEL: (415) 845-5100
FAX: (415) 845-5100

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Special thanks and appreciation are expressed to the many naval activities that cooperated so willingly in completing and returning the questionnaires for this study; and, above all, to Dr. Irwin A. Berg, Associate Professor of Psychology, for his work of editing, and for his many helpful suggestions.

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INTRODUCTION

Background. The industrial might of America is founded on the principle of adopting new methods, procedures, improvements and the development of new and better machines. The phrases often encountered, such as "ideas at work", or "do it better", are a reflection of the basic American drive to improve and progress. While various techniques have been used to encourage this attitude among employees, the suggestion system is one of the readily available methods of encouraging and furthering this drive.

Experience through the years has shown that suggestion systems are effective ways of using the know-how and creative ability of the employee group, as well as building goodwill through providing a means of earning extra compensation.

The idea behind the suggestion system runs deep into the psychology of human relations and is based firmly on the inherent desire of all men for improvement in the conditions under which they live, for progress and advancement, and for a better way of life (9, p.1).

In modern times the suggestion system, in one form or another, has been known and used for more than half a century. Whether called a Suggestion System, Beneficial Suggestion Program, Bureau of New Ideas, Proposal for Improvement Plan, or any of the various other titles under which it has served, the idea has been in more or less

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constant use over a long period of years.

History and Growth of Navy Beneficial Suggestion

Program. The first full fledged suggestion system in the United States was initiated in 1918 by the United States Navy (11, p.276). The 65th Congress authorized the payment of cash awards for beneficial suggestions in the Naval Appropriations Act approved July 1, 1918, which reads in part as follows:

That the Secretary of the Navy is hereby authorized, in his discretion and under such rules and regulations as he may prescribe, to pay cash awards to civilian employees of the Navy Department or the Naval Establishment or other persons in civil life when due to a suggestion or series of suggestions by them there results an improvement or economy in manufacturing process or plant or naval material...

The present existing legal basis of the Navy Beneficial Suggestion Program may be found in the provisions contained in Public Law 600, 79th Congress, which was approved on August 2, 1946, and in Executive Order 9817 of December 31, 1946, which authorize the Secretary of the Navy to pay cash awards to civilian employees of the Navy for constructive suggestions which are adopted (10, p.1).

Since 1918 the system has expanded beyond all expectations, and during the fiscal year 1949 more than one hundred thirty Naval activities had suggestion programs in operation. These activities employed, on an average, over 285,000 civilians, or slightly more than eighty per cent of the total number of civilians employed by the Navy in the

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continental United States, Territories and possessions.¹

This expansion has made the Navy one of the leading governmental agencies in the operation of employee suggestion programs. Many millions of dollars have been saved through adoption of employee suggestions for improving working methods and equipment, and the program is still growing (2, p.1474). Table I shows the growth and annual operating statistics of the Navy Beneficial Suggestion Program over a recent three year period. The yearly records show that the fiscal year 1949 has proven to be another year of increased activity in the suggestion program. The 40,800 suggestions submitted resulted in the adoption of over 12,500 improvement ideas which will bring in an estimated saving of almost nine and one-half million dollars during the fiscal year 1950, plus important intangible benefits - an increase of nearly three million dollars over each of the two previous years. Employees are submitting more suggestions than were received in preceding years, and over thirty-one per cent of these ideas are worthy of adoption.²

During the 1950 Fall Conference of the National Association of Suggestion Systems, the Department of the Navy was presented with an achievement plaque for having the outstanding Beneficial Suggestion Program of all governmental

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1. Information furnished by the Research Division, Navy Department, Washington, D.C.
 2. Information furnished by the Research Division, Navy Department, Washington, D. C.

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TABLE I

GROWTH AND OPERATING SUCCESS OF THE
NAVY BENEFICIAL SUGGESTION PROGRAM
Fiscal Years 1947, 1948 & 1949

For Fiscal Year Ending - June 30:	Number of Suggestions			%	Total	Tangible
	Sub- mitted:	Per 100 employ- ees :	Pro- cessed:	Adopted:	pro- cessed, awarded - ed :	cash savings (1st year) (Dollars):
1947	:23,201:	8.0	:20,794:	6,072	: 29.1	: 218,056 : 6,095,695
1948	:33,695:	12.7	:30,809:	9,261	: 30.1	: 268,415 : 6,759,799
1949	:40,856:	14.2	:39,957:	12,612	: 31.5	: 299,344 : 9,487,901

Source: Navy Beneficial Suggestion Program - Quarterly Statement, Quarter Ending June 30, 1949.

TABLE

THE RESULTS OF THE INVESTIGATION INTO THE CAUSES OF THE ACCIDENT AT THE ...

Category	Item	Value	Unit
Material	Steel	100	kg
	Aluminum	50	kg
	Copper	20	kg
Labor	Welding	120	hours
	Assembly	80	hours
	Inspection	40	hours
Energy	Electricity	1500	kWh
	Gas	500	m ³
	Water	1000	liters

... ..

departments.³ The Navy was awarded this plaque for achieving, during the year 1948, the greatest percentage of increase in employee participation that was accomplished by any governmental agency (8, p.52f).

Coordination and Control. The Navy Department delegates to each activity the authority and responsibility of conducting a suggestion program that will fit in with the over-all system as coordinated and controlled from Washington. It is the mission of the Office of Industrial Relations to assure the continuous operation of a sound civilian personnel program throughout the Naval Establishment. The Office of Industrial Relations is organized to cover the entire field of personnel administration and, in so doing, acts as the controlling and coordinating agency of the Navy Beneficial Suggestion Program. Central guidance and assistance are given in order to foster high employee morale and augment the working efficiency of the program (2, p.1473f).

Navy Department Policy. Each Naval activity is definitely acquainted with the policy of the Navy Department (10, p.1) with regard to incentive programs, as follows:

The Department attaches great importance to the submission of constructive beneficial suggestions by civilian employees, both supervisory and non-supervisory, and looks to each activity to institute and conduct a suggestion program as an integral part of the Navy's industrial relations program.

3. A similar award was presented to Industry at the 1950 Annual Fall Conference which was held on October 25, 1949 at the Hotel Statler in Cleveland.

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Functions of the Program. Employees must be encouraged and reminded to think creatively. They must be assured that their suggestions will receive fair and impartial consideration. The means for investigating suggestions must be prompt and well organized. Fair awards must be given for such ideas as are adaptable for use by the activity. Seiwert (13, p.10) states that these can be considered as the most important functions of the suggestion program. Without their satisfactory performance, the purpose of the program would not be accomplished.

Purpose of the Program. The purpose of the Beneficial Suggestion Program (10, p.2) is also clearly defined.

The Beneficial Suggestion Program is designed to increase the efficiency of the service by arousing and stimulating employee participation in the submission of ideas. Under this program employees receive cash awards or other recognition for adopted suggestions. The program encourages creative thinking and affords a means through which employees may participate in the problems of the Navy. The program can be very effective in stimulating the interest of employees in their jobs and has a high morale value.

The above statement is promulgated throughout the Naval Establishment and acquaints all activities with the basic purpose of the program.

Review of Related Studies. Many studies have been made and many surveys are conducted periodically for the purpose of determining administrative techniques, success, and attitudes toward the suggestion and award systems used in

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industry and business.⁴ Governmental departments, as a whole, are surveyed along with the private companies and at times make good showings (8, p.52f). In a recent comparative study of the Navy Beneficial Suggestion Program with the suggestion and award systems used in forty-one industrial organizations, Becton (3, p.57) found that by comparison the over-all Navy program is considered to be good. He states that "From results obtained...the Navy's program compares quite favorably." However, that does not mean that the system is without defects or faults which can possibly be corrected if only brought to light. Any system can benefit from periodic revision and wax strong.

4. The National Association of Suggestion Systems (NASS), founded August 12, 1942 to strengthen suggestion system activities of members in industry, commerce, finance, and government, conducts annual nation-wide surveys. The American Management Association has also been active in this work.

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STATEMENT OF THE PROBLEM

Scope and Organization. A Naval activity, for purpose of clarification, can be considered any Bureau or Office in the Navy Department, Washington, D.C., Headquarters of the Marine Corps, or any Naval or Marine Shipyard, Air Station, Ammunition Depot, Supply Depot, Ordnance Plant, District Headquarters, and any other Naval or Marine Corps establishment, station, or activity which constitute a separate command (10, p.4). During the fiscal year 1949, more than 130 such activities had suggestion programs in effect.

Very few of these activities are alike and the differences of each in size, function, experience and location indicate the vast diversification existing among them. The results will be variations in administrative techniques and also differences in the relative success of the local suggestion program within each activity.

Each individual Naval activity is governed in the accepted manner of conducting a Beneficial Suggestion Program by Instruction 25, contained in a manual known as "Navy Civilian Personnel Instructions."⁵ This instruction is explicit in some cases, and in other instances it is not strictly binding but merely suggests means of accomplish-

5. The manual known as "Navy Civilian Personnel Instructions" (NCPPI) is a two volume loose-leaf book, kept up to date by the substitution of revised pages. A separate "Instruction" is provided in the manual for each of the major fields of personnel instructions, in all, 50 instructions.

ing the functions of the suggestion program; therefore, individual interpretation of instructions will at times be the controlling factor.

Purpose of the Study. An extensive survey has never been made of all the Naval activities conducting Navy Beneficial Suggestion Programs for the purpose of obtaining facts and opinions regarding the administrative techniques used by each activity in conducting its own program.⁶ Form reports are periodically submitted to the coordinating agency - the Office of Industrial Relations - and furnish information from which an evaluation can be made of the relative success of local programs; however, this data does not include the opinions, recommendations, or attitudes of individual activities toward the program.

It is realized that personalities, experience, and interest in the program will dictate the use of different administrative techniques. As previously stated, techniques will necessarily vary with the different interpretation of instructions. Also, they are dependent upon the size of the activity and the nature of its operations.

It is the purpose of this study to make a comparison of the administrative techniques used in all Naval activities operating a Beneficial Suggestion Program. Further, this investigation will note the major differences in the administration of the program, disclose traits of

6. Information furnished by the Research Division, Navy Department, Washington, D.C.

The first section of the report is devoted to a general
description of the project and its objectives. It is
followed by a detailed account of the work done during
the period covered by the report. This is done in
the form of a series of chapters, each dealing with
a different aspect of the project. The chapters are
as follows: Chapter I, Introduction; Chapter II, The
Theory of the Project; Chapter III, The Construction
of the Project; Chapter IV, The Results of the Project;
Chapter V, The Conclusions of the Project; Chapter VI,
The Future of the Project. Each chapter is written
in a clear and concise style, and is well illustrated
by diagrams and figures. The report is a valuable
contribution to the literature of the subject, and
is highly recommended to all those interested in
the subject.

the program as a whole, suggest changes for improvement, and recommend areas for further study.

On the occasion of winning the National Association of Suggestion Systems Merit Award for increased participation in suggestion system activity, Secretary of the Navy Francis P. Matthews wrote the Chiefs of all Bureaus and Offices, Navy Department and the Commandant, U.S. Marine Corps stressing the importance of the suggestion program. This circular letter, attached as Appendix A, is quoted in part as follows:

...I suggest that you cause a check to be made of the effectiveness of the Beneficial Suggestions Program in the various activities under your management control, and take appropriate steps to insure that the Navy will reap the benefit of all of its employees' ideas for improvement.

It is hoped that this study will be of some assistance in evaluating the effectiveness of the Navy Program.

It is also intended that this study evaluate the suggestion system as a whole, as conducted in all the Naval activities, from the standpoint of importance as a channel of communications. With reference to this point, Daniel Katz (4, p.149) states:

...the communication process that should exist between the rank and file and supervisors, in terms of desirable human relationships, has broken down because the specific roles written into the organizational functioning have not fostered this development. ...To remedy this picture a new organizational gadget is introduced, namely a suggestion system. The suggestion system now enables the worker to bypass his supervisor and get his idea to a higher level of management. Suggestion systems may

The first part of the document is a letter from the Secretary of the State Department to the Secretary of the War Department. The letter is dated August 1, 1918, and is addressed to the Secretary of the War Department, Washington, D.C. The letter is signed by the Secretary of the State Department, Robert Lansing.

The second part of the document is a letter from the Secretary of the War Department to the Secretary of the State Department. The letter is dated August 1, 1918, and is addressed to the Secretary of the State Department, Washington, D.C. The letter is signed by the Secretary of the War Department, Woodrow Wilson.

The third part of the document is a letter from the Secretary of the State Department to the Secretary of the War Department. The letter is dated August 1, 1918, and is addressed to the Secretary of the War Department, Washington, D.C. The letter is signed by the Secretary of the State Department, Robert Lansing.

have considerable merit but they do not solve the problem of communication between supervisor and worker.

THE UNIVERSITY OF CHICAGO
DEPARTMENT OF CHEMISTRY
5408 SOUTH DIVISION STREET
CHICAGO, ILLINOIS 60637

Dear Sirs:

I have the pleasure to inform you that your application for admission to the Ph.D. program in Chemistry for the fall semester of 1964 has been approved. You will receive a letter from the Registrar regarding the admission process and the requirements for the program.

Your academic record is excellent, and we are confident that you will make a valuable contribution to our department. We are pleased to have you join our faculty and to work with us on your research project.

Please contact the Registrar's Office at the above address for further information regarding the admission process and the requirements for the program.

Very truly yours,
[Signature]

[Name]
[Title]

PROCEDURE

The Questionnaire. In order to determine the administrative techniques of each naval activity, and gather certain facts and differences of opinion, it was necessary to devise a questionnaire that would obtain all the necessary information and retain the cooperation of the participating activities. Very often, surveys ask for cold facts and have little life or personality. To be of value, they must of necessity be factual but also the questionnaire used in the survey can be worded in a manner that will retain interest in the study from the individual activities replying.

A rough draft of the questionnaire was distributed to members of the Beneficial Suggestion Committee at the U.S. Naval Supply Depot, Great Lakes, Illinois. The interest shown in the project was gratifying and many worthwhile suggestions were offered - resulting in revisions, additions and deletions to the original questionnaire.

In devising the questionnaire, an attempt was made to make it reasonably simple for each Naval activity to respond to all sixty-seven questions with the least amount of difficulty on their part. It was possible to answer all questions by simply checking the appropriate blank, or by inserting a word, sentence or number.

Questions were selected which would cover all phases of the program and bring attention to the differences of administrative techniques among the Naval activities participating in the survey. In some instances, the questions

CHAPTER I

The first part of the book is devoted to a general introduction to the subject of the history of the English language. It begins with a discussion of the various theories of the origin of the English language, and then proceeds to a detailed account of the historical development of the language from its earliest forms to the present day. The author discusses the influence of various languages on English, and the changes in pronunciation, grammar, and vocabulary over time. He also touches upon the role of literature and the spoken language in the development of the English language.

The second part of the book is devoted to a detailed study of the English language in its various stages. It begins with a study of Old English, and then proceeds to Middle English and Modern English. The author discusses the changes in the language during each period, and the influence of various factors on the development of the language. He also discusses the role of literature and the spoken language in the development of the English language.

The third part of the book is devoted to a study of the English language in its various dialects. It begins with a study of the dialects of the North, and then proceeds to the dialects of the Midlands and the South. The author discusses the differences between the dialects, and the factors that have influenced their development. He also discusses the role of literature and the spoken language in the development of the English language.

The fourth part of the book is devoted to a study of the English language in its various varieties. It begins with a study of the varieties of the English language in the United States, and then proceeds to the varieties of the English language in other parts of the world. The author discusses the differences between the varieties, and the factors that have influenced their development. He also discusses the role of literature and the spoken language in the development of the English language.

The fifth part of the book is devoted to a study of the English language in its various registers. It begins with a study of the registers of the English language in the United States, and then proceeds to the registers of the English language in other parts of the world. The author discusses the differences between the registers, and the factors that have influenced their development. He also discusses the role of literature and the spoken language in the development of the English language.

asked were aimed at assessing the attitude toward the program of those persons who had filled out the questionnaires. Questions were based on six areas of the study, as follows: (1) General, (2) Attitude, (3) Policy, (4) Procedure, (5) Promotion, and (6) Performance. A copy of the official covering letter and questionnaire will be found in Appendices B and C.

A statement was made to each activity surveyed, both in the covering letter and in the questionnaire, that the individual responses would be treated as confidential and only the summarized results of all activities would be revealed. It was also emphasized that upon completion of the study, all questionnaires would be destroyed. It was believed that by so doing, sincerity and truthfulness in questionnaire responses would result. In order to retain the complete cooperation of all activities, the covering letter also attempted to explain the reasons for conducting the survey.

The Survey. The questionnaire and the official covering letter were sent to all Naval activities that had conducted a Beneficial Suggestion Program during fiscal year 1949, excluding a few activities which have since been placed in a maintenance status. The number totaled one hundred fifty-two Naval and Marine Corps activities. The names of the activities were obtained from those listed in the four Navy Suggestion Program quarterly

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statements⁷ for fiscal year 1949, as having submitted quarterly reports to the Office of Industrial Relations.

It was felt that a complete survey of all activities would be much more meaningful and useful than a small sample which would necessitate determining if the statistical results were, or were not, significant. The percentage return on any questionnaire distributed by mail is governed by so many variables that the exact prediction of return is virtually impossible. It was anticipated, however, that close to a one hundred per cent response would be obtained because of the fact that the covering letter was of an official nature and most activities would be reluctant to ignore it.

All questionnaires were mailed on December 29, 1949 and in the covering letter a request was included that questionnaires be completed and returned by January 20, 1950 - eighty per cent of the questionnaires returned were received prior to that date. It was realized too late that this would make it difficult for activities outside the continental limits to meet the deadline. Twenty-five questionnaires, or twenty per cent of the 125 questionnaires returned, were received after the deadline but all responses were used in the study. The tabulation of data was commenced two weeks after the deadline and at that time 82.2% of all questionnaires distributed had been completed and returned.

7. The Navy Beneficial Suggestion Program Quarterly Statements are prepared and distributed by the Office of Industrial Relations, Navy Department. The activities listed therein represent those points at which Beneficial Suggestion Committees have been established.

RESULTS

Data Collected. The responses from the questionnaires have been tabulated and are presented in the tables that follow.

Appendix D gives a summary of the survey results in tabular form. It indicates the total number of activities that answered each question and the percentage of activities that selected each response in each individual question.

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TABLE II
 COMPOSITION OF THE SURVEY DISTRIBUTION,
 BY ACTIVITY, BUREAU OR OFFICE AND
 PERCENTAGE OF QUESTIONNAIRES RETURNED

Activity, Bureau or Office	Question- naires Distributed	Question- naires Returned	Percentage Returned
Bureau of Aeronautics:	30	27	90.0%
Bureau of Ordnance	26	19	73.1%
Chief of Naval Operations	23	19	82.6%
Bureau of Supplies & Accounts	22	17	77.3%
Bureau of Ships	19	16	84.2%
Bureau of Medicine & Surgery	8	6	75.0%
Office of Naval Material	8	6	75.0%
Marine Corps	7	7	100.0%
Bureau of Naval Personnel	7	6	85.7%
Bureau of Yards & Docks	2	2	100.0%
Total	152	125	82.2% (a)

(a) This represents the percentage of questionnaires returned by all activities and is not the average percentage of return from each individual Activity, Bureau, or Office.

THE STATE
 DEPARTMENT OF AGRICULTURE
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This report was prepared by the Department of Agriculture, University of California, Berkeley, California, under the direction of the Director of the Department of Agriculture, University of California, Berkeley, California.

TABLE III

DISTRIBUTION OF THE 125 NAVAL
ACTIVITIES SURVEYED
BY SIZE AND FUNCTION (a)

Size Group	Average Number of Employees	Function Group					Total Number Activities Surveyed
		I (Aviation)	II (Ship-yards)	III (Ordnance)	IV (Supply)	V (Administration)	
A	Up to 499	7	5	2	9	10	33
B	500 to 999	4	5	7	5	12	33
C	1,000 to 1,999	6	4	7	6	4	27
D	2,000 to 4,999	3	3	1	6	2	15
E	5,000 and over	6	9	1	1	0	17
Total Number Activities Surveyed		26	26	18	27	28	125

(a) The size of each activity was obtained from the reported average number of civilian employees for fiscal year 1949.

Handwritten notes or instructions at the top of the page, possibly describing the purpose of the table.

Product Name	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
Product A	10	15	20	25	30	35	40	45	50	55	60	65
Product B	12	18	22	28	32	38	42	48	52	58	62	68
Product C	8	12	16	20	24	28	32	36	40	44	48	52
Product D	5	8	12	16	20	24	28	32	36	40	44	48
Product E	3	5	7	9	11	13	15	17	19	21	23	25
Product F	2	3	4	5	6	7	8	9	10	11	12	13
Product G	1	2	3	4	5	6	7	8	9	10	11	12
Product H	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6
Product I	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1	1.1	1.2	1.3
Product J	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1	1.1	1.2
Product K	0.05	0.1	0.15	0.2	0.25	0.3	0.35	0.4	0.45	0.5	0.55	0.6
Product L	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.1	0.11	0.12	0.13
Product M	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.1	0.11	0.12
Product N	0.005	0.01	0.015	0.02	0.025	0.03	0.035	0.04	0.045	0.05	0.055	0.06
Product O	0.002	0.003	0.004	0.005	0.006	0.007	0.008	0.009	0.01	0.011	0.012	0.013
Product P	0.001	0.002	0.003	0.004	0.005	0.006	0.007	0.008	0.009	0.01	0.011	0.012
Product Q	0.0005	0.001	0.0015	0.002	0.0025	0.003	0.0035	0.004	0.0045	0.005	0.0055	0.006
Product R	0.0002	0.0003	0.0004	0.0005	0.0006	0.0007	0.0008	0.0009	0.001	0.0011	0.0012	0.0013
Product S	0.0001	0.0002	0.0003	0.0004	0.0005	0.0006	0.0007	0.0008	0.0009	0.001	0.0011	0.0012
Product T	0.00005	0.0001	0.00015	0.0002	0.00025	0.0003	0.00035	0.0004	0.00045	0.0005	0.00055	0.0006
Product U	0.00002	0.00003	0.00004	0.00005	0.00006	0.00007	0.00008	0.00009	0.0001	0.00011	0.00012	0.00013
Product V	0.00001	0.00002	0.00003	0.00004	0.00005	0.00006	0.00007	0.00008	0.00009	0.0001	0.00011	0.00012
Product W	0.000005	0.00001	0.000015	0.00002	0.000025	0.00003	0.000035	0.00004	0.000045	0.00005	0.000055	0.00006
Product X	0.000002	0.000003	0.000004	0.000005	0.000006	0.000007	0.000008	0.000009	0.00001	0.000011	0.000012	0.000013
Product Y	0.000001	0.000002	0.000003	0.000004	0.000005	0.000006	0.000007	0.000008	0.000009	0.00001	0.000011	0.000012
Product Z	0.0000005	0.000001	0.0000015	0.000002	0.0000025	0.000003	0.0000035	0.000004	0.0000045	0.000005	0.0000055	0.000006
Product AA	0.0000002	0.0000003	0.0000004	0.0000005	0.0000006	0.0000007	0.0000008	0.0000009	0.000001	0.0000011	0.0000012	0.0000013
Product AB	0.0000001	0.0000002	0.0000003	0.0000004	0.0000005	0.0000006	0.0000007	0.0000008	0.0000009	0.000001	0.0000011	0.0000012
Product AC	0.00000005	0.0000001	0.00000015	0.0000002	0.00000025	0.0000003	0.00000035	0.0000004	0.00000045	0.0000005	0.00000055	0.0000006
Product AD	0.00000002	0.00000003	0.00000004	0.00000005	0.00000006	0.00000007	0.00000008	0.00000009	0.0000001	0.00000011	0.00000012	0.00000013
Product AE	0.00000001	0.00000002	0.00000003	0.00000004	0.00000005	0.00000006	0.00000007	0.00000008	0.00000009	0.0000001	0.00000011	0.00000012
Product AF	0.000000005	0.00000001	0.000000015	0.00000002	0.000000025	0.00000003	0.000000035	0.00000004	0.000000045	0.00000005	0.000000055	0.00000006
Product AG	0.000000002	0.000000003	0.000000004	0.000000005	0.000000006	0.000000007	0.000000008	0.000000009	0.00000001	0.000000011	0.000000012	0.000000013
Product AH	0.000000001	0.000000002	0.000000003	0.000000004	0.000000005	0.000000006	0.000000007	0.000000008	0.000000009	0.00000001	0.000000011	0.000000012
Product AI	0.0000000005	0.000000001	0.0000000015	0.000000002	0.0000000025	0.000000003	0.0000000035	0.000000004	0.0000000045	0.000000005	0.0000000055	0.000000006
Product AJ	0.0000000002	0.0000000003	0.0000000004	0.0000000005	0.0000000006	0.0000000007	0.0000000008	0.0000000009	0.000000001	0.0000000011	0.0000000012	0.0000000013
Product AK	0.0000000001	0.0000000002	0.0000000003	0.0000000004	0.0000000005	0.0000000006	0.0000000007	0.0000000008	0.0000000009	0.000000001	0.0000000011	0.0000000012
Product AL	0.00000000005	0.0000000001	0.00000000015	0.0000000002	0.00000000025	0.0000000003	0.00000000035	0.0000000004	0.00000000045	0.0000000005	0.00000000055	0.0000000006
Product AM	0.00000000002	0.00000000003	0.00000000004	0.00000000005	0.00000000006	0.00000000007	0.00000000008	0.00000000009	0.0000000001	0.00000000011	0.00000000012	0.00000000013
Product AN	0.00000000001	0.00000000002	0.00000000003	0.00000000004	0.00000000005	0.00000000006	0.00000000007	0.00000000008	0.00000000009	0.0000000001	0.00000000011	0.00000000012
Product AO	0.000000000005	0.00000000001	0.000000000015	0.00000000002	0.000000000025	0.00000000003	0.000000000035	0.00000000004	0.000000000045	0.00000000005	0.000000000055	0.00000000006
Product AP	0.000000000002	0.000000000003	0.000000000004	0.000000000005	0.000000000006	0.000000000007	0.000000000008	0.000000000009	0.00000000001	0.000000000011	0.000000000012	0.000000000013
Product AQ	0.000000000001	0.000000000002	0.000000000003	0.000000000004	0.000000000005	0.000000000006	0.000000000007	0.000000000008	0.000000000009	0.00000000001	0.000000000011	0.000000000012
Product AR	0.0000000000005	0.000000000001	0.0000000000015	0.000000000002	0.0000000000025	0.000000000003	0.0000000000035	0.000000000004	0.0000000000045	0.000000000005	0.0000000000055	0.000000000006
Product AS	0.0000000000002	0.0000000000003	0.0000000000004	0.0000000000005	0.0000000000006	0.0000000000007	0.0000000000008	0.0000000000009	0.000000000001	0.0000000000011	0.0000000000012	0.0000000000013
Product AT	0.0000000000001	0.0000000000002	0.0000000000003	0.0000000000004	0.0000000000005	0.0000000000006	0.0000000000007	0.0000000000008	0.0000000000009	0.000000000001	0.0000000000011	0.0000000000012
Product AU	0.00000000000005	0.0000000000001	0.00000000000015	0.0000000000002	0.00000000000025	0.0000000000003	0.00000000000035	0.0000000000004	0.00000000000045	0.0000000000005	0.00000000000055	0.0000000000006
Product AV	0.00000000000002	0.00000000000003	0.00000000000004	0.00000000000005	0.00000000000006	0.00000000000007	0.00000000000008	0.00000000000009	0.0000000000001	0.00000000000011	0.00000000000012	0.00000000000013
Product AW	0.00000000000001	0.00000000000002	0.00000000000003	0.00000000000004	0.00000000000005	0.00000000000006	0.00000000000007	0.00000000000008	0.00000000000009	0.0000000000001	0.00000000000011	0.00000000000012
Product AX	0.000000000000005	0.00000000000001	0.000000000000015	0.00000000000002	0.000000000000025	0.00000000000003	0.000000000000035	0.00000000000004	0.000000000000045	0.00000000000005	0.000000000000055	0.00000000000006
Product AY	0.000000000000002	0.000000000000003	0.000000000000004	0.000000000000005	0.000000000000006	0.000000000000007	0.000000000000008	0.000000000000009	0.00000000000001	0.000000000000011	0.000000000000012	0.000000000000013
Product AZ	0.000000000000001	0.000000000000002	0.000000000000003	0.000000000000004	0.000000000000005	0.000000000000006	0.000000000000007	0.000000000000008	0.000000000000009	0.00000000000001	0.000000000000011	0.000000000000012
Product BA	0.0000000000000005	0.000000000000001	0.0000000000000015	0.000000000000002	0.0000000000000025	0.000000000000003	0.0000000000000035	0.000000000000004	0.0000000000000045	0.000000000000005	0.0000000000000055	0.000000000000006
Product BB	0.0000000000000002	0.0000000000000003	0.0000000000000004	0.0000000000000005	0.0000000000000006	0.0000000000000007	0.0000000000000008	0.0000000000000009	0.000000000000001	0.0000000000000011	0.0000000000000012	0.0000000000000013
Product BC	0.0000000000000001	0.0000000000000002	0.0000000000000003	0.0000000000000004	0.0000000000000005	0.0000000000000006	0.0000000000000007	0.0000000000000008	0.0000000000000009	0.000000000000001	0.0000000000000011	0.0000000000000012
Product BD	0.00000000000000005	0.0000000000000001	0.00000000000000015	0.0000000000000002	0.00000000000000025	0.0000000000000003	0.00000000000000035	0.0000000000000004	0.00000000000000045	0.0000000000000005	0.00000000000000055	0.0000000000000006
Product BE	0.00000000000000002	0.00000000000000003	0.00000000000000004	0.00000000000000005	0.00000000000000006	0.00000000000000007	0.00000000000000008	0.00000000000000009	0.0000000000000001	0.00000000000000011	0.00000000000000012	0.00000000000000013
Product BF	0.00000000000000001	0.00000000000000002	0.00000000000000003	0.00000000000000004	0.00000000000000005	0.00000000000000006	0.00000000000000007	0.00000000000000008	0.00000000000000009	0.0000000000000001	0.00000000000000011	0.00000000000000012
Product BG	0.000000000000000005	0.00000000000000001	0.000000000000000015	0.00000000000000002	0.000000000000000025	0.00000000000000003	0.000000000000000035	0.00000000000000004	0.000000000000000045	0.00000000000000005	0.000000000000000055	0.00000000000000006
Product BH	0.00000000000000											

TABLE IV
 NUMBER AND PER CENT OF ACTIVITIES
 IN EACH SIZE AND FUNCTION GROUP
 THAT FEEL THE OPPORTUNITIES FOR
 THEIR EMPLOYEES TO MAKE SUGGESTIONS
 IS MORE LIMITED THAN IN OTHER ACTIVITIES

Size Group	Function Group					Number Answering "Yes"	Per Cent Answering "Yes"
	I	II	III	IV	V		
A	4	4	0	1	7	16	49%
B	1	3	3	1	7	15	46%
C	1	1	1	2	1	6	22%
D	0	1	0	1	1	3	20%
E	1	0	0	0	0	1	6%
Number Answering "Yes"	7	9	4	5	16	41	--
Per Cent Answering "Yes"	27%	35%	22%	19%	59%	--	32.8% (a)

(a) This represents the percentage of affirmative answers received from all activities in response to Question 3. It is not the average percentage of return from each individual group.

TABLE V
 AMOUNT OF CASH AWARD,
 BOTH PRESENT AND RECOMMENDED,
 FOR CIVILIAN EMPLOYEES SUBMITTING
 BENEFICIAL SUGGESTIONS WHICH ARE ADOPTED

Estimated First Year's Savings	Present Cash Award	Present Per Cent of First Year's Savings	Recommended Per Cent of First Year's Savings (a)
\$1,000	\$50	5.00%	8.6%
\$10,000	\$275	2.75%	6.8%
\$100,000	\$725	0.72%	5.5%
\$1,000,000	\$1,625	0.16%	4.9%

(a) The recommendations are the averages of 31% of the Naval activities surveyed that felt the present cash award was too small.

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 STATE UNIVERSITY OF
 CANTON

NAME	ADDRESS	CITY	STATE
J. J.
...
...
...
...

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TABLE VI

AVERAGE SIZE OF SUGGESTION COMMITTEES,
 AVERAGE CASH AWARDS, PERCENTAGE OF MINIMUM AWARDS,
 AND PERCENTAGE OF INTANGIBLE SAVINGS FOR
 NAVAL ACTIVITIES CONDUCTING
 BENEFICIAL SUGGESTION PROGRAMS,
 BY FUNCTION GROUPS, FOR FISCAL YEAR 1949

Function Group	Average Number of Persons on Suggestion Committees	Average Cash Award	Percentage of all Suggestions Adopted Receiving Minimum Awards	Percentage of Adoptions Resulting in Intangible Savings
I	7.4	\$25.94	42.7%	39%
II	8.3	\$42.55	63.4%	34%
III	6.6	\$80.41	49.5%	43%
IV	6.8	\$29.10	32.4%	45%
V	6.3	\$39.93	50.0%	55%
Average ^(a)	7.2	\$42.39	54.8%	42.3%

(a) This is the average of all activities responding and is not a simple average of the Group averages.

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Run	Time (min)	Retention Time (min)	Peak Area	Peak Height	Peak Width
1	1.2	1.2	100	10	0.5
2	2.5	2.5	200	20	0.5
3	3.8	3.8	300	30	0.5
4	5.1	5.1	400	40	0.5
5	6.4	6.4	500	50	0.5
6	7.7	7.7	600	60	0.5
7	9.0	9.0	700	70	0.5
8	10.3	10.3	800	80	0.5
9	11.6	11.6	900	90	0.5
10	12.9	12.9	1000	100	0.5

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TABLE VII

AVERAGE NUMBER POSTERS SUPPLIED AND
USED, SUGGESTION BOXES, AND RATIO
OF EMPLOYEES TO EACH SUGGESTION BOX
FOR NAVAL ACTIVITIES CONDUCTING
BENEFICIAL SUGGESTION PROGRAMS,
BY FUNCTION GROUPS, FOR FISCAL YEAR 1949

Function Group	Average Number of Suggestion Boxes	Average Ratio of Employees to Each Box	Average Number of Posters Supplied	Average Number of Posters Used
I	15	167:1	21	20
II	30	133:1	32	31
III	11	128:1	13	11
IV	14	143:1	16	14
V	8	98:1	10	8
Average (a)	16.4	137:1	18:1	17.4

(a) This is the average of all activities responding and is not a simple average of the Group averages.

Table 1

The following table shows the results of the analysis of variance for the effect of the different factors on the response variable. The results are presented in the form of a table with the following columns: Factor, Sum of Squares, Degrees of Freedom, Mean Square, and F-value. The F-value is compared with the critical value from the F-distribution table to determine the significance of the effect.

Factor	Sum of Squares	Degrees of Freedom	Mean Square	F-value
A	120	2	60	10.0
B	80	2	40	6.7
C	40	2	20	3.3
AB	10	4	2.5	0.4
AC	10	4	2.5	0.4
BC	10	4	2.5	0.4
ABC	10	8	1.25	0.2
Error	100	18	5.56	
Total	370	24		

The results of the analysis of variance show that the effect of factor A is highly significant (F=10.0, p<0.05). The effects of factors B and C are also significant (F=6.7 and F=3.3, respectively, p<0.05). The interaction effects are not significant (F<0.4, p>0.05).

TABLE VIII

FREQUENCY IN WHICH SUGGESTIONS ARE COLLECTED
FROM THE SUGGESTION BOXES BY NAVAL ACTIVITIES
CONDUCTING BENEFICIAL SUGGESTION PROGRAMS
BY FUNCTION GROUPS, FOR FISCAL YEAR 1949

Function: Group	Per Cent Of Activities Answering	% of Suggestions Collected:				
		Daily	Bi- Weekly	Weekly	Bi- Monthly	Monthly
I	77	20	5	45	5	25
II	96	4	12	76	0	8
III	94	23	12	53	6	6
IV	78	9	24	62	0	5
V	71	15	10	55	5	15
Average (a)	83	14	13	58	3	12

(a) Simple average of the Group averages.

TABLE I

Summary of the results of the experiments on the effect of the concentration of the solution on the rate of the reaction. The reaction was carried out at 25°C. The concentration of the reactants was 0.1 M. The rate of the reaction was measured by the change in the optical density of the solution at 440 mμ.

Time (min)	Concentration of the solution (M)				Rate of reaction (min ⁻¹)	Order of reaction
	0.1	0.2	0.3	0.4		
0	0.1	0.1	0.1	0.1	0.00	
10	0.1	0.1	0.1	0.1	0.01	1
20	0.1	0.1	0.1	0.1	0.02	1
30	0.1	0.1	0.1	0.1	0.03	1
40	0.1	0.1	0.1	0.1	0.04	1
50	0.1	0.1	0.1	0.1	0.05	1
60	0.1	0.1	0.1	0.1	0.06	1
70	0.1	0.1	0.1	0.1	0.07	1
80	0.1	0.1	0.1	0.1	0.08	1
90	0.1	0.1	0.1	0.1	0.09	1
100	0.1	0.1	0.1	0.1	0.10	1

TABLE I. Summary of the results of the experiments on the effect of the concentration of the solution on the rate of the reaction.

TABLE IX

METHODS BY WHICH SUGGESTOR IS ABLE TO
TRANSMIT SUGGESTIONS TO THE SUGGESTION
COMMITTEE IN 121 NAVAL ACTIVITIES
CONDUCTING BENEFICIAL SUGGESTION PROGRAMS,
FOR FISCAL YEAR 1949

Methods of Transmission	Number of Activities Using Each Method	Per Cent of the 121 Activities Using Each Method
Suggestion Box	97	80%
Office Mail	97	80%
In Person	54	45%
U.S. Mail	49	40%
Total	297 ^(a)	--

(a) This figure totals more than 121 because many activities use more than one manner of transmitting suggestions to the committee.

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Reaction	Yield (%)	mp (°C)	lit. (°C)
1	85	102-103	102-103
2	78	104-105	104-105
3	92	106-107	106-107
4	88	108-109	108-109
5	80	110-111	110-111
6	75	112-113	112-113
7	82	114-115	114-115
8	70	116-117	116-117
9	85	118-119	118-119
10	78	120-121	120-121
11	82	122-123	122-123
12	75	124-125	124-125
13	80	126-127	126-127
14	72	128-129	128-129
15	85	130-131	130-131
16	78	132-133	132-133
17	82	134-135	134-135
18	75	136-137	136-137
19	80	138-139	138-139
20	72	140-141	140-141
21	85	142-143	142-143
22	78	144-145	144-145
23	82	146-147	146-147
24	75	148-149	148-149
25	80	150-151	150-151

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TABLE X
 PERSONS WHO CONDUCT INVESTIGATIONS
 IN 121 NAVAL ACTIVITIES
 CONDUCTING BENEFICIAL SUGGESTION PROGRAMS
 FOR FISCAL YEAR 1949

Persons Who Conduct Investigations	Number of Activities Using Each Method	Per Cent of the 121 Activities Using Each Method
Technical or Staff personnel	51	42%
Part Time Investigators	50	42%
Supervisory personnel	45	38%
Other (a)	23	19%
Full Time Investigators	12	10%
Total	161 (b)	--

(a) "Other" includes: appointed investigating committees, members of Beneficial Suggestion Committee, and departments concerned.

(b) This figure totals more than 121 because some activities use more than one manner of investigating suggestions.

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RECORD OF ANALYSES
FOR THE YEAR 1911

No. of analyses made in 1911	Total weight of samples	Total value of analyses
10	100	1000
20	200	2000
30	300	3000
40	400	4000
50	500	5000
60	600	6000

1. The analyses were made by the following persons:

2. The following is a list of the substances analyzed:

TABLE XI
 PROCEDURES FOR NOTIFYING
 SUGGESTERS OF REJECTION AND AWARD
 IN 122 NAVAL ACTIVITIES
 CONDUCTING BENEFICIAL SUGGESTION PROGRAMS
 FOR FISCAL YEAR 1949

Methods of Notification	Notification for:			
	Rejection		Award	
	Number of Activities Using Each Method	% of 122 Activities Using Each Method	Number of Activities Using Each Method	% of 122 Activities Using Each Method
Personal Letter	103	84%	57	71%
Personal Contact	47	39%	70	57%
Form Letter	23	19%	19	16%
Notice on Bulletin Board	0	0	11	9%
Other (a)	4	3%	5	4%
Total	177 (b)	--	192 (b)	--

(a) "Other" includes: notification in activity organ, telephone contact, supervisor, and recorder.

(b) Figures total more than 122 because some activities use more than one manner of notifying suggesters.

TABLE XII

RECORDS MAINTAINED IN ADMINISTERING THE
SUGGESTION PROGRAM IN 120 NAVAL ACTIVITIES
CONDUCTING BENEFICIAL SUGGESTION PROGRAMS
FOR FISCAL YEAR 1949

Records Maintained	Number of Activities Using Each Record	Per Cent of the 120 Activities Using Each Record
Serial Number File	79	66%
Alphabetical Name File	75	63%
Subject File	67	56%
Award Winners File	46	39%
Other (a)	20	17%
Department File	12	10%
Total	299 (b)	--

(a) "Other" includes: follow-up file, alphabetically by rejections, commendations and winners file, Kardex process file, and types of suggestions file.

(b) This figure totals more than 120 because many activities maintain more than one type of record.

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Date	Description	Amount
1/15/78
1/22/78
1/29/78
2/5/78
2/12/78
2/19/78
2/26/78
3/5/78
3/12/78
3/19/78
3/26/78
4/2/78
4/9/78
4/16/78
4/23/78
4/30/78
5/7/78
5/14/78
5/21/78
5/28/78
6/4/78
6/11/78
6/18/78
6/25/78
7/2/78
7/9/78
7/16/78
7/23/78
7/30/78
8/6/78
8/13/78
8/20/78
8/27/78
9/3/78
9/10/78
9/17/78
9/24/78
10/1/78
10/8/78
10/15/78
10/22/78
10/29/78
11/5/78
11/12/78
11/19/78
11/26/78
12/3/78
12/10/78
12/17/78
12/24/78
12/31/78

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TABLE XIII

INCENTIVES, IN ADDITION TO POSTERS, USED
TO STIMULATE THE SUGGESTION PROGRAM
IN 120 NAVAL ACTIVITIES
CONDUCTING BENEFICIAL SUGGESTION PROGRAMS
FOR FISCAL YEAR 1949

Incentives Used	Number of Activities Using Each Incentive	% of the 120 Activities Using Each Incentive
Bulletin Board Notice	50	67%
Publicity in Activity Organ	67	56%
Personal Contact	64	53%
Other (a)	31	26%
Direct Mail	11	9%
Total	253 (b)	--

(a) "Other" includes: radio, payroll inserts, talks, local newspapers, public address system, back of telephone book, honor roll, and contests.

(b) This figure totals more than 120 because many activities use more than one type of incentive.

Table 1

The following table shows the results of the experiments conducted on the effect of the concentration of the solution on the rate of reaction. The concentration of the solution was varied from 0.1 M to 0.5 M, and the rate of reaction was measured at each concentration. The results are shown in the table below.

Concentration of Solution (M)	Rate of Reaction (s ⁻¹)	Observations
0.1	0.02	Very slow reaction
0.2	0.04	Slow reaction
0.3	0.06	Medium reaction
0.4	0.08	Fast reaction
0.5	0.10	Very fast reaction

From the above table, it is clear that the rate of reaction increases with the increase in the concentration of the solution. This is because the higher the concentration, the more particles are present in a given volume, and thus, the more frequent the collisions between the particles, leading to a faster reaction rate.

TABLE XIV

AVERAGE MAXIMUM AWARD AND FIRST YEAR'S SAVINGS
FOR SUGGESTIONS WITH TANGIBLE BENEFITS
IN 81 NAVAL ACTIVITIES BY FUNCTION GROUP (a)

Function Group	Number Activities Answering	Average Maximum Award	Average First Year's Savings	Award as % of Savings
I	20	\$319	\$41,041	.78%
II	19	\$356	\$60,949	.58%
III	14	\$693	\$22,872	3.03%
IV	16	\$295	\$15,368	1.91%
V	12	\$350	\$96,352	.36%
Total	81			
Average (b)		\$392.30	\$45,685.21	.86%

(a) Intangible awards, where savings could not be measured in dollars and cents, have been excluded.

(b) This is the average of all activities responding and is not a simple average of the Group averages.

TABLE I

Summary of the results of the experiments on the effect of the concentration of the solution on the rate of reaction.

Concentration of solution	Rate of reaction	Time taken for completion	Volume of gas evolved	Temperature
0.1 M	0.05	100	10	25
0.2 M	0.10	50	20	25
0.3 M	0.15	33	30	25
0.4 M	0.20	25	40	25
0.5 M	0.25	20	50	25
0.6 M	0.30	17	60	25
0.7 M	0.35	14	70	25
0.8 M	0.40	12	80	25
0.9 M	0.45	11	90	25
1.0 M	0.50	10	100	25

The results show that the rate of reaction increases with the concentration of the solution. This is due to the fact that there are more particles of the reactants in a given volume of solution, and therefore more collisions between them.

TABLE XV
 AMOUNT AND PERCENTAGE DISTRIBUTION
 OF THE MAXIMUM CASH AWARDS
 EVER PRESENTED TO SUGGESTERS
 IN 81 NAVAL ACTIVITIES, BY FUNCTION GROUP

Amount Of Cash Award	Function Group					Average Per Cent (a)
	I	II	III	IV	V	
Up to \$100	25%	26%	7%	25%	33%	23.2%
\$101 to \$275	45%	42%	79%	50%	58%	54.3%
\$276 to \$1,000	20%	21%	0	19%	0	12.0%
\$1,001 and over	10%	11%	14%	6%	9%	10.0%

(a) Simple average of the Group averages.

TABLE XVI

AVERAGE NUMBER OF EMPLOYEES, PERCENTAGE OF WOMEN,
AND PARTICIPATION RATES FOR NAVAL ACTIVITIES
CONDUCTING BENEFICIAL SUGGESTION PROGRAMS
BY FUNCTION GROUPS, FOR FISCAL YEAR 1949

1	2	3	4	5
Function Group	Average Number of Civilian Employees	Percentage of Employees that are Women	Participation Rate (No. of Suggestions per 100 employees)	Corrected Participation Rate (No. of Suggesters per 100 employees)
I	2,518	15.2%	11.2	9.8
II	3,985	13.9%	25.6	20.2
III	1,410	7.9%	8.9	8.0
IV	1,998	31.2%	6.0	5.4
V	788	41.0%	4.2	3.4
Average (a)	2,153	22.6%	14.7	10.8

(a) This is the average of all activities responding and is not a simple average of the Group averages.

TABLE I

Summary of the results of the experiments on the effect of the concentration of the solution on the rate of the reaction.

Concentration of the solution	Rate of the reaction	Time taken for completion	Volume of gas evolved	Temperature
0.1 M	0.05	100	100	25
0.2 M	0.10	50	100	25
0.3 M	0.15	33	100	25
0.4 M	0.20	25	100	25
0.5 M	0.25	20	100	25
0.6 M	0.30	16	100	25
0.7 M	0.35	14	100	25
0.8 M	0.40	12	100	25
0.9 M	0.45	11	100	25
1.0 M	0.50	10	100	25

The rate of the reaction increases with the increase in the concentration of the solution. The volume of gas evolved is constant for all concentrations.

DISCUSSION AND INTERPRETATION

Questionnaire Returns. Completed questionnaires were returned by one hundred twenty-five activities. This was 82.2% of the one hundred fifty-two questionnaires which had been distributed. In addition to the activities returning questionnaires, two activities replied with letters only, explaining why they were unable to complete the questionnaire. One stated that it could not divert the efforts of the activity from its normal functions in order to supply the information requested, unless a directive to do so was received from the Navy Department. The other activity did not consider the questionnaire sufficiently important to warrant a reply and referred the matter to its cognizant bureau in Washington for a decision in the matter.

Table II shows a composition of the survey distribution by activity, bureau or office and the number and percentage of questionnaires returned from each. It is interesting to note that the percentage of return was over 73% from each of the ten activities, bureaus or offices. The returns are, therefore, large enough from each group to be meaningful.

Returns indicated that the activities surveyed had a positive interest in the subject and the majority had devoted considerable time and thought to completing the questionnaire. Most activities utilized the space provided, and margin area, for additional comments. Approximately 14% appended official or personal letters in order to express

THE HISTORY OF THE UNITED STATES

CHAPTER I
 THE DISCOVERY OF AMERICA
 The first discovery of America was made by Christopher Columbus in 1492. He sailed from Spain in search of a westward route to the Indies. On October 12, 1492, he landed on the island of San Salvador in the West Indies. This event marked the beginning of European exploration and settlement in the Americas.

CHAPTER II
 THE EARLY YEARS OF THE COLONIES
 The early years of the colonies were marked by hardship and struggle. The settlers faced a variety of difficulties, including lack of food, disease, and conflict with Native Americans. Despite these challenges, the colonies grew and developed, laying the foundation for the future United States.

CHAPTER III
 THE STRUGGLE FOR INDEPENDENCE
 The struggle for independence began in the 1760s, as the colonies grew increasingly discontent with British rule. The American Revolution broke out in 1775, and the Continental Congress declared independence on July 4, 1776. The war ended in 1781 with the British surrender at Yorktown, leading to the signing of the Treaty of Paris in 1783.

CHAPTER IV
 THE CONSTITUTION AND THE EARLY YEARS OF THE UNION
 The Constitution was drafted in 1787 and ratified in 1788. It established the framework for the federal government and the relationship between the states and the federal government. The early years of the Union were marked by political and economic challenges, but the country grew and prospered.

CHAPTER V
 THE WESTERN EXPANSION
 The western expansion of the United States was a major theme in the country's history. Settlers moved westward in search of land and opportunity, leading to the acquisition of new territories and the eventual admission of new states. The expansion was often accompanied by conflict and the displacement of Native Americans.

CHAPTER VI
 THE CIVIL WAR AND RECONSTRUCTION
 The Civil War, fought from 1861 to 1865, was a pivotal moment in American history. It was fought over the issue of slavery and the rights of states. The Union emerged victorious, and the war led to the abolition of slavery and the Reconstruction era, which sought to rebuild the South and integrate African Americans into society.

CHAPTER VII
 THE GROWTH OF THE UNITED STATES
 The growth of the United States continued throughout the 19th century. The country expanded its territory and population, and its economy grew rapidly. The Industrial Revolution brought about significant changes in society and the economy, leading to the rise of a new middle class and the growth of cities.

CHAPTER VIII
 THE PROGRESSIVE ERA
 The Progressive Era, which began in the late 19th century and lasted until the early 20th century, was a period of social and political reform. Progressives sought to address the problems of industrialization, such as poverty, corruption, and social inequality. They pushed for reforms in government, education, and social welfare.

CHAPTER IX
 THE WORLD WAR ERA
 The World War era, from 1914 to 1945, was a period of global conflict and change. The United States entered World War I in 1917 and World War II in 1941. The war led to the emergence of the United States as a superpower and the beginning of the Cold War.

CHAPTER X
 THE MODERN ERA
 The modern era, from the mid-20th century to the present, has been a period of rapid change and progress. The United States has led the world in technological innovation, space exploration, and social reform. It has also faced significant challenges, including the Vietnam War, the civil rights movement, and the economic challenges of the late 20th century.

themselves more fully and completely, explain problems peculiar to their activity, and explain certain administrative techniques. A few enclosed sample copies of various reports, schedules, certificates and award pins. Nineteen activities requested copies of the results of this study.

Segregation of Activities. For purposes of comparison and ease of presentation, all of the 125 activities that cooperated in the survey are grouped into five categories according to function, and also into five categories according to size.

1. Function. These groups will be referred to by Roman numerals. Each is composed, as nearly as possible, of those activities generally having the same function, as follows:

- (a) Group I, entirely "Aviation", is composed of twenty-six activities under the management control of the Bureau of Aeronautics.
- (b) Group II, principally "Shipyards", includes sixteen activities under the management control of the Bureau of Ships, nine activities under the Chief of Naval Operations, and one activity under the Bureau of Yards and Docks. It is composed of a total of twenty-six activities.
- (c) Group III, entirely "Ordnance", is composed of eighteen activities under the management control of the Bureau of Ordnance.
- (d) Group IV, principally "Supply", includes seventeen activities under the management control

of the Bureau of Supplies and Accounts, five activities under the Office of Naval Material, three activities under the Marine Corps, and two activities under the Bureau of Medicine and Surgery. It is composed of a total of twenty-seven activities.

- (e) Group V, entirely "Administration", includes ten activities under the management control of the Chief of Naval Operations, six activities under the Bureau of Naval Personnel, four activities under the Bureau of Medicine and Surgery, four under the Marine Corps, and also includes the four administrative activities located in Washington for the Bureau of Aeronautics, Bureau of Ordnance, Office of Naval Material and the Bureau of Yards and Docks. The Group is composed of a total of twenty-eight activities.

2. Size. These groups will be referred to by capital letters. Each activity is placed in one of five groups depending on the average number of civilian employees reported for fiscal year 1949. Table III shows the distribution of activities according to size and function.

Results. In presenting the results obtained from the survey, each area of the study will be considered separately, and questions pertaining to each area will be discussed individually. Appendix D gives a summary of the survey results in tabular form. It indicates the total number of activities

that answered each question and the percentage of activities that selected each response in each individual question.

1. General. The General area of the study is composed of questions: 1, 2, 4, 8, 9, 10, 16, 45, 59, and 67. The results of question 1, "Name of Activity", are explained in Table II which gives the percentage of return for each type of activity.

Question 2 asks: "Date your Beneficial Suggestion Program was started." One hundred-seven activities answered this question, disclosing that 37% of the suggestion programs had been initiated since the end of World War II. Eleven per cent of the programs were installed between 1918 and 1941, prior to World War II. Over 50% of the programs were started during the war years, and the majority of these commenced operation prior to July, 1943. It might be interesting to note that, among the one hundred-seven activities answering this question, the total period of suggestion activity is over seven hundred years.

All activities responding answered question 4, which asks: "In your opinion how effective is the Beneficial Suggestion Program at your activity?" Sixty-nine activities, or 55%, replied that the effectiveness of their program was "satisfactory." Fifteen per cent described it as "below average", while 22% called it "better than average." At each extreme, namely the "very poor" and "excellent" ratings, we find 1% of the activities. One activity that marked its program "below average", stated as the reason: "...because

of poor utilization of suggestions for benefit of activity. Poor committee action."

Only three activities did not answer question 8, which asks: "Do you recommend that all personnel in uniform participate in the Suggestion Program on an equal basis with civilian employees?" Fifty-seven per cent of the 122 activities replying answered "yes." Fifteen per cent thought that it should be limited to "Enlisted Personnel only", and only 28% of the activities answered "no."

The results of the survey indicate that the majority of Naval activities hold the same opinion as Becton (3,p.57) who, as a result of his comparative study of the Navy Program with the systems used in industry, stated: "A program that has proven its value many times over to civilians employed by the Navy can be made much more effective by extending it to the personnel in uniform." A committee has been established in the Personnel Policy Board to study the matter of presenting cash awards to military personnel but has not as yet made any specific recommendations.⁷

Question 9 asks: "The present instructions provide that 'no award shall be paid to any officer or employee for any suggestion which represents a part of the normal requirements of the duties of his position.' Do you feel that this, to a certain extent restricts the number of possible good suggestions?" All 125 activities answered this question, 60% of

7. Information furnished by the Research Division, Navy Department, Washington, D.C.

The first part of the book is devoted to a general history of the United States from its discovery by Columbus in 1492 to the present time. It covers the early years of settlement, the struggle for independence, and the formation of the federal government. The second part of the book is devoted to a detailed history of the United States from 1789 to the present time. It covers the early years of the republic, the expansion of the territory, the Civil War, and the Reconstruction period. The third part of the book is devoted to a detailed history of the United States from 1865 to the present time. It covers the Reconstruction period, the Gilded Age, the Progressive Era, and the modern era.

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them said "no", while 40% answered "yes." The following comments are typical of those which were expressed:

It is sometimes difficult to determine and to convince suggester wherein suggestion is part of regular duties. Furthermore, decisions are not uniform between activities.

Personnel have in some instances adopted the defeatist attitude that the suggestion will be considered part of his position and will not bother to either check further or submit it.

Limits the little extra effort which might result in a valuable idea.

It is human nature to do only what one must do. Absence of monetary incentive is bound to restrict to some extent.

It is difficult to draw a line to decide if or if not part of duties. This regulation is in dire need of clarification. Many suggestions are not forthcoming because potential suggesters have nothing to gain.

'Normal requirements of the duties' is too broad a statement and practically eliminates supervisors from receiving awards.

...instruction eliminates an incentive to exercise initiative.

It undoubtedly restricts the number of 'suggestions' though not necessarily the number of 'improvements' as supervisors make 'improvements' without submitting them as suggestions.

...do not recommend change because it would establish a precedent of award for normal duty.

Many of the comments which were volunteered indicated that some activities find it difficult to determine whether or not some of the suggestions submitted represent a part of the normal requirements of the duties of the suggester's position. As pointed out by Seinwerth it is almost an impossibility to write up an eligibility policy in which every problem

and decision will be anticipated. He states (13, p.54_f), "Eligibility provisions must of necessity be specifically formulated to meet requirements of different industries, various types of organizations, and the kinds of work found within the organizations. The creative thinking expectancy for each individual job depends entirely upon management's own evaluation." He further adds, "There will always be so-called 'borderline eligibility cases', which will require sound judgment to interpret and resolve in the best interests of both the suggestion plan and the company requirements. It is always well in such cases to lean to the side of liberality... As such we should never let up in our continued efforts to explain eligibility and to educate all employees with respect to the provisions of the eligibility policy."

Only one activity did not answer question 10, which asks: "To your knowledge, have you ever had an employee attempt to keep an idea or an invention a secret with the intention of using it for personal advantage or selling it for more elsewhere?" Ninety-six per cent of the 124 activities replying answered "no." Only four per cent had experienced this situation and these five activities are all large, being in Size Groups D and E.

"To what extent has the suggestion program contributed to the success of good employee relations at your activity?", which was question 16, was answered by 122 activities. The majority, 61%, felt that the program had helped employee relations "to a moderate degree." More activities, 20%, stated

The first part of the document is a preface, written by the author, in which he explains the purpose and scope of the work. He states that the book is intended to provide a comprehensive overview of the subject matter, covering both the theoretical and practical aspects. The author emphasizes that the book is written for a general audience, but it is also suitable for students and professionals alike.

The second part of the document is the main body of the text, which is divided into several chapters. Each chapter covers a specific aspect of the subject, providing a detailed analysis and discussion. The author uses a clear and concise writing style, making the complex concepts easy to understand. The chapters are well-organized and flow logically from one to the next, providing a coherent and comprehensive overview of the subject.

The third part of the document is a conclusion, in which the author summarizes the main findings and conclusions of the work. He reiterates the importance of the subject matter and the value of the information provided in the book. The author also expresses his hope that the book will be helpful and informative to the reader.

The fourth part of the document is a list of references, which includes a comprehensive list of the sources used in the book. The references are listed in alphabetical order and include books, articles, and other relevant materials. This list provides a valuable resource for anyone interested in further research on the subject.

that the program had helped "very little" than the 17% which believed it had contributed "a great deal." One activity reporting very little help volunteered the following comment, "However, management is definitely at fault since they do not pursue this objective." Only two activities reported that the program had not contributed at all to the success of good employe relations, and these activities were both in Group I A.

The response to question 45 of the questionnaire, which asks, "Do your employees sometimes use the Suggestion Program as an outlet for grievances, without also submitting a suggestion on how to improve the situation?" was very large as all except one activity answered. Sixty-four per cent answered "no" and the remaining thirty-six per cent said "yes." The majority of comments elicited by this question indicated that those activities which answered "yes" qualified their answer by stating that the situation arose "seldom", "very rarely" or "occasionally." Other typical comments were:

These grievances are answered and are used by management to study trends. Many expose conditions in the area of human relationships.

The worst abuse is an attempt to use program to get ordinary maintenance items accomplished.

No, we have a grievance system.

Forty per cent of the activities answered "yes" to question 59, which asks: "Has your activity ever adopted any suggestions that were developed at other naval activities?" Of those activities answering in the affirmative, 50% did not have a record of the number adopted; however, the remainder

The first part of the book is devoted to a general introduction to the subject of the history of the English language. It discusses the various influences that have shaped the language over the centuries, from Old English to Modern English. The author also touches upon the geographical spread of the language and the role of literature in its development.

The second part of the book is a detailed study of the Old English period, from the 5th to the 11th century. It covers the Anglo-Saxon invasions, the development of the Old English dialects, and the influence of Old Norse and Old French. Key works of Old English literature, such as Beowulf and the Anglo-Saxon Chronicle, are discussed in detail.

The third part of the book deals with the Middle English period, from the 12th to the 15th century. It examines the influence of the Norman Conquest, the development of the Middle English dialects, and the rise of the English vernacular. The works of Geoffrey Chaucer, particularly The Canterbury Tales, are highlighted as major contributions to the literature of this period.

The fourth part of the book covers the Early Modern English period, from the 16th to the 17th century. It discusses the influence of the Renaissance, the development of the Early Modern English dialects, and the rise of the English vernacular. The works of William Shakespeare and the King James Bible are discussed in detail.

The fifth part of the book deals with the Late Modern English period, from the 18th to the 19th century. It examines the influence of the Enlightenment, the development of the Late Modern English dialects, and the rise of the English vernacular. The works of Jane Austen and Charles Dickens are discussed in detail.

The sixth part of the book covers the 20th century and the present day. It discusses the influence of the Industrial Revolution, the development of the 20th-century English dialects, and the rise of the English vernacular. The works of George Orwell and Virginia Woolf are discussed in detail.

The book concludes with a summary of the main findings and a list of references. It is a comprehensive and accessible introduction to the history of the English language, suitable for students and general readers alike.

indicated that the average number of adoptions was five. Sixty per cent of the 116 activities responding answered "no" to the question.

Question 67 is of a general nature and should be discussed in this General area of the study; but, because this question was purposely put at the end of the questionnaire, in order to elicit concluding remarks, it will be better to present the results from it after all other questions have been discussed.

2. Attitude. The area of the study concerned with Attitude is composed of questions: 3, 5, 6, 11, 12, 13, 14, 15, and 55.

All activities answered question 3, the first under the heading of Attitude, which asks: "Do you feel that the opportunities for your employees to make suggestions is more limited in your activity than in others?" To this question 67% answered "no" and 33% said "yes." It is interesting to note that fifty-nine per cent of the activities in Group V, with the main function of Administration, answered "yes" to this question; also, forty-nine per cent of the activities in Group A, with less than five hundred civilian employees, answered "yes." Table IV shows the percentage of activities, in both function and size groups, that responded in the affirmative to this question. The responses indicate that the smaller non-industrial activities feel that their work is not as conducive to beneficial suggestions as that in some of the other activities.

The activities answering "yes" were asked to state their reasons for answering as they did. The following comments are typical of those expressed:

Not an industrial station, therefore not much opportunity.

Only maintenance - not a shipyard.

Large number non-English speaking, illiterate employees.

Due solely to the nature of the work performed. Majority of the employees engaged in clerical and storage duties.

Due to the fact that this base is engaged in maintenance and logistic services in comparison with other activities which are highly industrial.

Because all employees are in the clerical field and suggestions are only in the office.

Offices handling paper work are not as fertile territory as plants handling materials or operating machines.

Question 5 asks: "Do you feel that the suggestion program at your activity is worth all the effort and time expended administering it?" Only two activities did not answer the question and 93% of those responding replied "yes." Three activities said "no" and six activities indicated that they were "undecided."

"If you had your choice, would your activity continue to conduct a Beneficial Suggestion Program?" was the wording of question 6. This question obtained exactly the same response that was received from question 5. In both instances 93% of the activities replied in the affirmative. It brought out the fact that, if given their own choice in the matter, those few activities that felt the program was

The first of these is the fact that the...

...the second is the fact that the...

...the third is the fact that the...

...the fourth is the fact that the...

...the fifth is the fact that the...

...the sixth is the fact that the...

...the seventh is the fact that the...

...the eighth is the fact that the...

...the ninth is the fact that the...

...the tenth is the fact that the...

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...the thirteenth is the fact that the...

...the fourteenth is the fact that the...

...the fifteenth is the fact that the...

...the sixteenth is the fact that the...

...the seventeenth is the fact that the...

...the eighteenth is the fact that the...

...the nineteenth is the fact that the...

...the twentieth is the fact that the...

not worth-while would discontinue to conduct a program.

All activities, except one, answered question 11 which reads: "Do your employees have the attitude of indifference toward the Suggestion Program?" Thirty-six per cent answered "no" that indifference did not exist. Eight per cent replied "yes", it did exist and fifty-six per cent said that it existed "to a moderate extent." These figures show that a total of sixty-four per cent of the activities believe they are faced with an attitude of indifference among their employees. It is interesting to note that those activities claiming indifference were not clustered in any one group but were scattered among all the different categories of function and size. The condition brought to light by this question indicates that unless something is done to correct the situation, there is a good possibility that the program will fail at those activities where an attitude of indifference exists.

The same belief is held by Gates (5, p.1187) who states:

The principal cause of failure in the plans which have not met with success or which have gradually lost the employee's support has been indifference on the part of the employees. This indifference can usually be traced to one or more of the following causes:

- a. Poorly introduced system
- b. Improperly planned routines
- c. Lack of interest on the part of management
- d. Hostility of supervisors
- e. Delay in considering suggestions
- f. Insufficient awards

Ninety-one per cent of the 122 activities responding answered "no" to question 12 which asks: "Do you feel that the limit of good suggestions from your employees has just

The first part of the document is a letter from the Secretary of the Board of Directors to the shareholders. It discusses the financial performance of the company for the year ending December 31, 1924. The letter states that the company has achieved a net profit of \$1,200,000, which is a significant increase over the previous year. This is due to the successful completion of several large-scale projects and the efficient management of the company's resources. The letter also mentions that the company has paid a dividend of \$1.50 per share to the shareholders. The Secretary concludes the letter by expressing confidence in the company's future prospects and thanking the shareholders for their continued support.

Item	Amount
Net Profit	\$1,200,000
Dividend	\$1,500,000
Retained Earnings	\$2,700,000
Total	\$5,400,000

The second part of the document is a report from the Board of Directors to the shareholders. It provides a detailed analysis of the company's financial performance and discusses the various factors that have influenced the company's success. The report also outlines the company's strategy for the future and the Board's plans for increasing the company's profitability. The Board concludes the report by expressing its confidence in the company's future prospects and thanking the shareholders for their continued support.

about been reached?" Nine per cent replied "yes" to the question. There is a direct relationship between this question and the preceding question on employee attitudes. If a high degree of interest is predominant among the employees, then there is no limit to the possibility of receiving beneficial suggestions. Roethlisberger and Dickson (12, p.185) have the same opinion and, as early as 1929, made the following observation with regard to their experiments on working conditions and employee efficiency at the Western Electric Company: "What impressed management most, however, were the stores of latent energy and productive co-operation which clearly could be obtained from its working force under the right conditions. And among the factors making for these conditions the attitudes of employees stood out as being of predominant importance..."

Question 13 asks: "If the relation between labor and management were considered to be harmonious to a high degree, do you feel that suggestions would still be forthcoming without the use of a formal suggestion system and promise of award?" The majority of activities, 59%, answered "no", while 41% of the 124 activities responding answered "yes." The following comments are representative of those that were volunteered:

It is believed a suggestion program would still be necessary to keep employees aware of the fact their ideas were needed...

The cash award is the best incentive regardless of relationship.

The first part of the paper is devoted to a general discussion of the problem. It is shown that the problem is well-posed in the sense of Hadamard. The second part is devoted to the construction of the solution. The third part is devoted to the study of the properties of the solution. The fourth part is devoted to the study of the stability of the solution. The fifth part is devoted to the study of the convergence of the solution. The sixth part is devoted to the study of the error of the solution. The seventh part is devoted to the study of the numerical solution. The eighth part is devoted to the study of the application of the solution. The ninth part is devoted to the study of the conclusion. The tenth part is devoted to the study of the references.

REFERENCES

1. Hadamard, J. *Leçons sur le calcul variationnel*. Paris, 1908.
2. ...
3. ...
4. ...
5. ...
6. ...
7. ...
8. ...
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10. ...

Received by the Editor ...
 Printed in ...
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Yes, providing there was a method by which the employees received public recognition.

Yes, as to older employees - not as to younger.

Yes, but not as many as under a formal program.

The type of comments received indicate that even those who answered "yes" to the question do not feel strongly that suggestions would still be forthcoming because most have found it necessary to qualify their affirmative answers.

To question 14, "What is the primary objective of the Suggestion Program at your activity?" exactly 50% of all activities responding said that "monetary savings" was their prime objective. There were 28% that stated "improved industrial relations" was the primary objective, and 22% selected an objective other than the two mentioned. The majority of those stating a different objective than the two choices given, indicated that either "safety" or "increased efficiency" was the main objective. On the other hand, the National Association of Suggestion Systems determined from their 1949 survey that the majority, 69%, of the 300 companies participating felt that "improved industrial relations" was the primary objective and "monetary savings" was secondary (8, p.25). That is in direct opposition to the results obtained from this study of Naval activities.

It is felt that there can be no final answer to this question and it is not too important which objective is rated higher. The main thing is that both objectives are gained to the fullest extent. Seinwerth (13, p.132), in this

connection, has noted, "It is difficult to say just what is the principal value of a suggestion plan... There does not seem to be much question that a well-administered plan will result in both better employee-employer relations and more progressiveness and efficiency in the business...one is almost entirely dependent on the other, and it would be impossible to achieve either to any extent without achieving both."

In response to question 15, which asks: "Which (techniques) do you consider to be the most important?", 12% selected "techniques used in giving recognition to good ideas", and only 9% chose "techniques used in rejecting suggestions." The greater majority of activities, 79%, indicated that they considered them of equal importance. This question did not give much information and for that reason will not be discussed further. The actual techniques of recognition and rejection will be covered in the discussion of questions 48 and 49 in the area of Procedure.

Question 55 reads: "Do you feel that the cash awards as now provided are: too small, about right, or too high?" A total of 124 activities answered this question. Thirty-one per cent of them thought that the cash awards were "too small", and sixty-nine per cent said that they were "about right." None of the activities thought the awards were "too high." Fifty per cent of the activities that said the awards were too small desired a straight percentage of from 5% to 25% of the first year's savings; the other half of these activities

The first part of the document is devoted to a general introduction of the subject matter. It is followed by a detailed description of the various aspects of the problem under consideration. The author then proceeds to a critical analysis of the existing literature on the subject, pointing out the strengths and weaknesses of the various approaches. Finally, the author concludes with a summary of the main findings and a list of references.

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recommended that the cash awards be increased, but on a sliding scale. Table V shows the average recommended percentages of first year's savings as submitted by the activities that felt the present cash awards were too small. It is significant that not one activity surveyed considered the cash awards as now provided to be too high.

The National Association of Suggestion Systems (8, p.27) as a result of their 1949 survey, notes: "...10% of the savings still is the most universally used percentage." In that survey the NASS determined that only nineteen per cent of all its members in industry, commerce, finance and government have lower or higher percentages than 10% as the basis for awards. The Navy with its sliding scale commencing at 5% of the first year's savings falls within this small group.⁸ This is not new but has been true for a number of years. The NASS survey for 1945 indicated that the percentage award figure most generally used then was also 10%. The survey results revealed that a few companies exceeded this amount up to a high of 50% (6, p.67). The Navy by comparison is low. Becton (3, p.30) also holds this opinion and, as a result of his comparative study of the Navy Program with industrial programs, states: "The Navy's scale of award seems to be noticeably lower in comparison with the awards permitted in the various industries... it compares somewhat unfavorably with

8. Information furnished by the National Association of Suggestion Systems, Chicago, Illinois.

the scale allowed by the companies surveyed."

As previously mentioned, Gates said that one of the causes of an attitude of indifference among employees is "insufficient awards" (5, p.1187). We learned from the response to question 11 that indifference is believed to exist in sixty-four per cent of the Naval activities conducting Beneficial Suggestion Programs and since the Navy also pays low awards there is a good possibility that insufficient awards is one of the causes of the situation.

Many comments were volunteered by the activities centered around the issue of a fair reward for the efforts of the creative mind. The following are typical of the comments expressed:

There is need for a \$5 award; it would enhance the value of the \$10 award. Suggestions saving over \$1000 should not be penalized if savings or other values are confirmed therefore straight 5% would be better.

We have \$5.00 minimum award.

Believe the percentage of award to savings drops too sharply for the large savings.

Reports..., show a high percentage of \$10 awards. Suggestions in this category include worthwhile ideas which currently have little use...and, also, many ideas which are relatively inconsequential but which have been adopted. It does not appear equitable to pay the same award for both. If provisions could be made for a \$5 award it would save approximately \$1500 a year at this activity; it would increase the value of \$10 as an award...

Provisions should be made for a minimum cash award of at least \$3.00 for suggestions which do not necessarily have a monetary saving, but aid in better working conditions,...

3. Policy. The area of the study concerned with Policy is composed of questions 7, 17, 18, 31, 33, 35, 36, 38, 40, 41, 42, 43, 44, 46, 47, 51, 56, 57, and 60.

"Would you recommend that the commanding officers of individual activities be empowered to approve payment of awards higher than \$275.00 for any one suggestion?" is the way that question 7 reads. Seventy-eight per cent of the activities responding answered "no" to the question, and twenty-two per cent answered "yes." The majority, 74%, of the activities that replied in the affirmative indicated that the higher amount should be \$500.00, while 17% desired that the amount be increased to \$1,000.00.

Question 17 asks: "Do you guarantee to all employees, in writing, that no one shall lose his job or have his pay cut because of a suggestion made by him or another worker?" Only 11% of the activities answered "yes" to this question. One hundred nine, or 89%, of the activities replied "no."

The majority of comments volunteered by those activities answering "no" to the question indicated that most activities had not considered it necessary to do so. Typical comments are:

No, but believe it a good idea.

No, but this policy is well understood by all hands.

This idea is passed along by word of mouth.

Has never appeared necessary.

No, and cannot see why this should be needed.

We have never thought of this - see no need of it. Simply doing this would be likely to suggest a line of thought to employees they apparently do not now have.

Denz brings out the fact that it is often contended that the widespread use of the suggestion system will tend to decrease employment; but, he believes the conservation of man-hours and material means just the opposite - it means more jobs (1, p.4). Evidently this contention exists in 11% of the Naval activities because they see fit to ease any apprehension the employees may have by issuing a guarantee in writing. Byrne (1, p.29f) offers a solution to the problem and states: "In order to overcome the fear that adoption of a suggestion may lead to the loss of a job the only thing to do is to sell the suggestion plan. A successful suggestion plan takes mutual understanding and trust."

Eight activities did not answer question 18, which reads: "Does your activity use the number and quality of proposals from each employee as factors to be considered in raising wages and in making promotions?" Seventy-nine per cent answered "no", and the remaining twenty-one per cent replied "yes." Various comments were offered by those activities that answered negatively to the question, some of which are quoted below:

No, however, informal acceptance of this idea has recently been discussed.

Legality of so doing is questionable.

No - but when he is otherwise under consideration it is an item for evaluating his potential.

Considered only in case of two employees otherwise evenly matched.

Only to the extent it is a minor part of the employees service jacket.

Mosher and Kingsley (7, p.541) feel that when the value of suggestions cannot be evaluated in monetary terms, the rewards for suggestions should consist of increased esteem, salary advancement, promotion and public recognition. They state: "If nonfinancial incentives are to be used,... it is necessary for the administrative staff to go to some lengths in sponsoring the policy and in making it known that an employee's suggestion record will be accorded due weight in connection with advancement and promotion." There were 21% of the Naval activities that answered the question in the affirmative and evidently they feel that the good suggester should receive an additional remuneration, as do Mosher and Kingsley. Three comments submitted by this group, which are typical of all others, follow:

Making promotions only.

Yes, to a small degree, will make more use of this in future.

Interest in the work being done, ability, initiative, etc., are considered in making administrative pay increases and promotions - suggestions evidence this.

Ninety per cent of the activities said "no" to question 31 which asks: "Some commercial Suggestion and Award Systems allow the suggester to remain anonymous, if he so desires, rather than require him to identify himself. Do you believe such a plan would work more efficiently in your

activity than the present system?" It is interesting to note that some of the remaining ten per cent that answered "yes" to the question actually have anonymous systems in effect.

A few typical comments from this group are:

Anonymous system is presently used.

It is being done here if suggester so elects.

Our system has always been the anonymous system. It is the most favored; however, this is optional with any individual employee.

Suggesters may request anonymity at this Shipyard; only about one per cent request it.

This activity requires the suggester's name on suggestion form but provides a space for him to indicate whether he does or does not desire his name to be revealed to persons making the investigation. This system is considered very satisfactory.

On the other hand, some of the activities that answered "no" submitted the following typical comments:

No, but believe idea is good.

It is not possible to make anonymous awards.

Many suggestions require contact with suggester to obtain actual data.

Suggesters are frequently contacted during adoption consideration for elaboration on their ideas and given an opportunity to assist in the final solution.

From the findings of F. A. Denz (1, p.5) we can see that few persons desire anonymity. He states: "...when employees have been given the option of submitting suggestions either signed or anonymously, over 99 per cent of the suggestions received are voluntarily signed."

Question 33 asks: "Do you allow the suggester to

sit in as an observer in the meetings of the suggestion committee?" A total of 121 activities responded to this question of which the large majority, 74%, said "no"; and the remaining 26% answered "yes." A great number of the activities in Size Groups A and B said that they maintained this policy, whereas only a few of the larger activities answered in the affirmative. This would seem to indicate that this policy would put too great a burden on an activity with a large number of employees. Typical examples of the comments received follow:

Yes, if they desire.

Not always possible due to distance involved.

Would be serious loss of production time.

No, but no reason why he could not attend if he so requested.

If his presence is desired by committee he sits in at the meeting.

Question 35 reads: "How many persons constitute your Beneficial Suggestion Committee? How many are civilians? Naval officers? How many represent management? How many are employee representatives?" Table VI shows the average number of persons on the Beneficial Suggestion Committees in each Function Group. It was revealed that an average of 7.2 persons constitute the committees at the 113 activities which answered this question. Of this number, 78%, or 5.6 persons of each committee are civilians, and the remainder, 22%, are Naval officers. Thirteen per cent of the activities have no Naval officers on the suggestion committee. Forty-three per cent of the committees do not have employee representatives.

Of those activities allowing representatives of the employees to be members, they are outnumbered three to one, with 75% representing management.

It is interesting to note that 8%, or 9 of the 113 activities responding, have less than five members on their Beneficial Suggestion Committees, even though the Instructions state that the membership will consist of five or more persons (10, p.4). Eighty per cent of all committees with less than five members were clustered in Size Group A indicating that the small activities found it difficult, possibly owing to lack of personnel, to assign at least five persons to their committees. This discrepancy was not peculiar to any one Function Group but was found, to some extent, in all five.

The majority of the Naval activities, 57%, did report having employee representatives on their committees. This seems to be the best procedure according to Feldman (6, p.264), who states: "Employee representatives on the suggestion committee are found helpful because they tend to keep the employee's point of view before the other members of the committee and because they inspire more confidence in the justice of the plan on the part of the workers."

"How long do committee members serve?" is asked in question 36. One hundred nineteen activities answered this question and reported that 61% of their members serve for an "indefinite period"; 24% serve for "one year"; and the remaining 15% serve from "eighteen months" to "four years." One of the larger activities has the policy of rotating 25%

of the committee members annually.

Sixty per cent of the 119 activities responding to question 38 answered "yes." The question asks: In your activity, when an idea is accepted by the suggestion committee and put into effect, does its adoption become mandatory for all designated departments?" Some of those answering "yes" qualified their answer by adding the comment, "provided it is adaptable to other departments."

The remaining forty per cent answered "no" and some added comments, a few of which follow:

No, shops and departments too diversified.

Awards are made only after widest possible adoption.

No, except those of administrative nature.

No, however, Department reviewing suggestion is responsible for full utilization.

Question 40 asks: "Is the membership of the Suggestion Committee published to the employees?" The large majority, 84%, replied "yes"; and the remaining 16% of the 122 activities responding said "no."

In answer to question 41, "How often does the Beneficial Suggestion Committee convene to consider suggestions?" replies ranged from "bi-weekly" to "every 4 months." The following replies were received by the indicated per cent of the 121 activities responding: "as necessary" - 35%; "monthly" - 26%; "weekly, or less" - 20%; "every two weeks" - 15%; and "every two to four months" - 4%.

Gates (5, p.1187) mentioned that "delay in consider-

ing suggestions" is one of the causes of an attitude of indifference existant among the employees. The results of Question 11 indicated that indifference is believed to exist in 64% of the Naval activities. Since so many of the Committees convene infrequently, there is an excellent possibility that this delay in considering suggestions is one of the causes of the existing attitude of indifference toward the Program. Seinerth (13, p.76) believes that regular weekly meetings of the committee should be held on a stated day and at a definite hour.

"A two year limitation period is used in the present Beneficial Suggestion Program. Do you feel that this limitation period should be changed?" is asked in question 42. The responses showed that 91% said "no" and feel the time limit should not be changed. On the other hand, 9% feel that the time limit should be shortened, most of these indicated their preference was "one year." The National Association of Suggestion Systems (8, p.26) determined by their 1949 survey that the one year limitation period was favored by 63% of the companies participating.

Question 43 asks: "In order to win the cooperation of supervisors, some commercial Suggestion and Award Systems provide for paying the foreman or superintendent a bonus based on the total number of ideas turned in by men under him, coupled with ample publicity for him as well as for his men. Would you recommend that this policy be adopted by the Navy Suggestion Program?" The majority, 60%, of the activities re-

plied "no" to this question and the remainder, 40%, answered "yes." A great many comments were offered regarding this question which showed that a great deal of interest is centered around the problem of how to win the cooperation of supervisors. The following comments are typical of those expressed:

No, not worth extra work maintaining records.

It would be unlimited in Shipyards since the man would have 2 or 3 supervisors.

No, but recognition letters to such supervisors accomplish a similar purpose at this activity.

No, would encourage collusion.

Undecided, I believe the success of the program depends on the interest of the various supervisors; however, the above suggestion seems dangerous.

Yes, strongly in favor of this, sure fire method of getting supervisors to push program. It compensates him for his efforts.

Yes, definitely. This would enhance program greatly.

Yes, to the extent of formal recognition but not any monetary awards.

In answer to question 44, "How are awards for suggestions with intangible benefits determined?" the great majority of activities indicated that they had no fixed procedure nor method of determining the value of suggestions involving intangible benefits, other than committee discussion of each individual case. It would be too lengthy to attempt to list all comments submitted in answer to this question, but a few will be presented which are considered to be typical.

Left up to the discretion of the committee.

This is always difficult. Each case must be considered on its merits...

We have no definite standard.

Individually in each case after heated discussion.

In general, minimum award for suggestions with no tangible savings.

There is no determinate scale. Each suggestion is discussed individually and award determined. This procedure is not too satisfactory, however, and it is hoped that a better and consistent method can be evolved.

Degree of hazardness or helpfulness, originality and application.

By use of point system presented at Eastern Regional NASS Conference - New York, May 6, 1948.

Token award (minimum award).

No set rule is followed, the committee evaluates the merit of a suggestion. It might be advisable for OIR at Navy Department to establish guide lines which would be uniform at all activities.

Rule of thumb estimate.

Illinois Central Method X 2; i.e. \$10 award minimum instead of \$5.

Safety, health and morale factors.

By committee consideration of scope and the potential gain or loss. This is the most difficult of all evaluations...

We are guided by the criteria in Department of the Army Civilian Personnel Regulations E 3, May 1949.

By Beneficial Suggestion Committee using their own good judgment according to the circumstances of every case. Do not believe it is possible to lay down any formula for this.

Three activities indicated that they used the Illinois Central Railroad system as a guide for evaluating

intangible suggestions. For that reason, an outline of this system is presented in Appendix E. The reason that this system was selected over any other was because, as far as this writer could determine, there were no more than three activities that used the same fixed procedure or method in evaluating their intangible suggestions. Gates (5, p.1188) states that in regard to the establishment of a suggestion system there should be "a provision to insure as nearly uniform valuation of suggestions as possible."

Question 46 asks: "In your activity, what is considered a suitable time limit for the acknowledgment of suggestions?" The responses indicated a range of from "one day" to "two months" as the time required to acknowledge suggestions. Eighty per cent of the activities acknowledge within "one week"; and the majority of the remaining twenty per cent perform this task in "two weeks." Some, however, admit that it takes them from "two weeks" to "two months" to acknowledge a suggestion.

It is gratifying to note that the majority of activities attempt to acknowledge suggestions almost immediately; but the minority, which are careless and have undue delays in handling their suggestions, are only contributing to a lack of success in their suggestion programs. In the following, Feldman (6, p.261) explains the great importance the suggestion has to the suggester and how he can become discouraged by undue delays. He states:

Some of the negative hindrances to suggestion systems are the unpleasant experiences after

suggestions have been submitted. The attitude of a suggester is usually like that of an amateur writer who has sent a story to a magazine. He is fired with his idea; he is sure that it is extremely important; he is keen for a reply, and he interprets every day's delay either as an augury of success or as a proof of neglect. When he receives no acknowledgment and there is a long delay he is discouraged...

Continuing our discussion of the time involved in handling suggestions we look at question 47, which reads: "What is the average length of time required in your activity for the processing of suggestions after receipt?" The responses indicated a range of from "one week" to "six months" as the time required to process suggestions. A few activities were unable to indicate the average time needed for this function because it varied so much. Thirty-six per cent of the activities require "one month", on the average, to process suggestions; and twenty-six per cent indicate that an average time of "two months" is needed. The majority, 62%, of the 112 activities responding process in one or two months as indicated above; but, 22% claim it takes them about "four months." The next group, composed of 11% of the activities, needs "two weeks"; while, at the other extreme, 5% admit needing "six months" time, on the average, to complete the function of processing suggestions.

It is recognized that on individual suggestions this period of time can vary all the way from several days to several years, because many factors affect the speed of handling and processing. It is not practicable to set a time limit for this function. Seinwerth (13, p.141) gives

his solution to the problem by saying: "About all that can be done is to keep everlastingly at it, making every effort every day to answer suggestions completely and promptly. But never, never, sacrifice thoroughness for speed!"

Question 51 asks: "Do you present the award to the suggester prior to the suggestion being put into operation?" One hundred seventeen activities answered this question, 72% of which replied "no"; and 28% answered "yes." It is interesting to note that forty per cent of Size Group A answered in the affirmative that they do present the award before the suggestion is put into effect; but not one of the larger activities in Size Group E claimed doing this.

It would seem that the majority of Naval activities, especially the larger ones, have the same outlook on this question as do certain authorities in industry. Denz (1, p.28) states: "Employees are just as much interested in seeing their ideas in use as they are in the cash and there definitely should not be any payment unless the suggestion is put into effect." Seinwerth (13, p.139_r) also feels the same way and says: "...the award should not be paid until the suggestion is actually in effect. Thus the suggester is being paid for value received... It is true that the awards are delayed somewhat longer by holding up payment until the idea is in use, but this is more than offset by the other advantages."

Question 56 asks: "On what type of savings do you base your award?" The majority, 56%, of the activities

surveyed replied that they used "net savings"; and, 44% said they used "gross savings" on which to base their awards. It is the intent of the Office of Industrial Relations, Navy Department, that all Naval activities will use "gross savings" in governing the cash awards to civilians for beneficial suggestions.⁹ This instruction has been published and promulgated to each individual Naval activity in NCPI (10,p.9), the wording of which is "...A total estimate of the annual savings is made for the first year after the suggestion is adopted. All computations should be shown. 'Overhead' or 'Burden' should not be considered. Cost of adoption should be shown."

It is interesting to note that the above instruction does not specifically state whether gross savings or net savings will govern awards. Inasmuch as the majority, 56%, of all activities surveyed are using the wrong practice, it is this writer's opinion that the cause is merely a misinterpretation of the wording in the instruction.

In our discussion of question 55, under the area of Attitude, it was brought to light that the Navy's scale of awards is low. If most of the activities base these low awards on "net savings", then the suggester is being doubly penalized.

The NASS Survey for 1949 determined that there has

9. Information furnished by the Research Division, Navy Department, Washington, D.C.

been a swing from using gross savings as a basis of figuring awards to the use of net savings. It should be pointed out, however, that even though there has been this swing to net savings, 10% of the savings still is the most universally used percentage (8, p.26). If the Navy offered a straight 10% of the first year's savings as a cash award it might be satisfactory to base the awards on net savings, but as long as the award is low the only fair thing to do is base these awards on gross savings.

Fifty-nine per cent of the activities surveyed answered "yes" to question 57, which asks: "Does your activity supplement the cash award with some other form of recognition?" They said that these other forms of recognition consist of: commendation letters, framed certificates, personal letters, award pins (some with changeable numbers), presentation of official photographs of ceremony, and publication of name in activity organ and on bulletin board.

Forty-one per cent of the activities said "no", they did not supplement the cash award with other forms of recognition. It is interesting to note that only 11% of the largest activities in Size Group E said that they do not use other forms of recognition; and 55% of the smaller activities admitted they also do not use them. This indicates that the great majority of the larger activities have recognized there exists on the part of employees a real desire for, and appreciation of, an emblem of recognition. The principle value of all of these recognition or merit awards, which supplement

the cash award, is that they provide some tangible trophy, or remembrance, for retention after the cash award has been spent.

The wording of question 60 is: "At present, there are no provisions for cash awards for the adoption of a suggestion by other governmental agencies or departments. Should provisions be made whereby the suggester would receive cash awards from other departments in return for the use of the suggestion?" The great majority of the activities, 82%, replied "yes" to the question. Only 18% answered "no" and some of their reasons for so answering are explained by the following two comments: "One payment from the U.S. Government should meet all of its departments", and "It would involve too much clerical work."

4. Procedure. The area of the study concerned with Procedure is composed of questions: 29, 30, 32, 39, 48, 49, 50, 52, 53, 54, 58 and 66.

Question 29 asks: "How many suggestion boxes does your activity maintain?" and "How often are suggestions collected from the boxes?" It was revealed that the average number of suggestion boxes in each of the activities surveyed is 16.4. In the activities that use suggestion boxes, there is one box for every 137 employees. Table VII shows the ratio of employees to each suggestion box and the average number of boxes in each Function Group. It can be seen from the Table that there exists a much lower ratio in activities in Function Group V than in the other Groups. This indicates

that, in the activities entirely concerned with the function of Administration, one box serves a lesser number of persons than in other types of activities.

Table VIII shows how often suggestions are collected from the suggestion boxes by each of the Function Groups. The majority of all activities state that they collect suggestions "weekly." Feldman (6, p.261) states: "Suggestions should be collected frequently: at least twice a week." The survey reveals that only about 27% of the Naval activities replying collect their suggestions at least twice a week.

"In what manner is the suggester able to transmit his suggestions to the Committee?" is the wording of question 30. Table IX shows the results of this question in both number and per cent of activities selecting each response. Most activities use between two and three different manners of transmitting the suggestions to the committee - "suggestion boxes" and "office mail" were the two most popular systems and are used by 80% of the 121 activities replying.

The response to question 32, which asks: "How are your investigations handled?" is shown in Table X. It was revealed that some activities use more than one method of investigating suggestions. The most popular methods are: "part time investigators" and investigations by "technical or staff" personnel. These are used by 42% of the activities replying.

Question 39 asks: "Does the recorder devote himself exclusively to the function of administering the activ-

ity suggestion program?" One hundred twenty-three activities answered this question, 92% of which replied "no, only part time." On the other hand, 8%, or ten activities answered "yes." Eight of the ten activities replying in the affirmative are in Function Group II, all of which are also very large with over four thousand civilian employees. The other two activities that answered yes are in Groups I and V, both of which have over twelve hundred employees. As expected, the response to this question revealed that only the largest activities could afford to have a full time Recorder; however, only 47% of all the activities in Size Group E, having over 5,000 civilian employees, utilize the services of a full time Recorder.

In a very large activity, conducting a Beneficial Suggestion Program, it would seem that the potential savings and increased operating efficiency which can result from an effective program, would encourage management to assign a full time Recorder to the program. As Myra Curtis (7, p.539) so well said, "it is a sound administrative principle that a tiresome job is more likely to be attended to if it is made into an important duty for somebody than if it is merely a relatively unimportant incident of a larger job."

Questions 48 and 49 ask: "What procedure do you have for informing a suggester that his suggestion has been rejected?" and "How are suggesters notified of their awards?" Table XI clearly shows the response to these questions, by the 122 activities replying, and indicates the popularity

of the existant procedures for notifying the suggester of a rejection or an award. The most popular procedure in each of these functions is notification by "personal letter"; and the second most popular method is by "personal contact." It is interesting to note that in only slightly more than one-third of the cases, activities notify the suggester of a rejection by personal contact. Seinwerth (1, p.27) believes that both of these procedures should go hand in hand; he states: "The best way of explaining the reasons why a suggestion has not been adopted is to have a letter and a personal interview. I don't think that one takes the place of the other. The letter is the formal answer which the employee can keep. The personal interview prevents any misunderstanding." Feldman (6, p.264) also realizes the importance of personal contact with the suggester in the matter of rejections; he says: "Even a personal letter has the disadvantage that it cannot sufficiently take into account the state of mind of the employee."

Navy Civilian Personnel Instruction (10, p.8) states: "It is preferable to 'turn down' suggestions by personal contact." This indicates that the controlling agency, the Office of Industrial Relations, realizes the advantages of personal contact in rejecting suggestions; However, the majority of activities, 61%, do not follow this procedure.

Only four activities did not answer question 50, which asks: "Do you have a follow-up form or procedure to

expedite the installation of a suggestion after it has been accepted?" Sixty-five per cent of the 121 activities replying, answered "no"; the remaining thirty-five per cent said "yes." The following comments are typical of those given by the latter group:

Progress questionnaire to cognizant Department head at 30 day intervals.

Run it down by foot and phone.

Rechecks by investigators.

Send semi-monthly follow-up requiring an answer from the person responsible for installation.

Tickler file set up and follow up made by recorder.

Follow-up file.

Work-order and follow up with department head.

The next three questions in the area of the study on Procedure, are all concerned with the methods used in presenting awards. Question 52 asks: "In your activity are formal presentation ceremonies used in presenting awards?" In answer to this question, 87% of the one hundred twenty-two activities replying answered "yes."

The second question of this group, number 53, asks: "Who presents the award?" and "Where is the award presented?" Seventy per cent replied that the "Commanding Officer" presented the award, with the remaining thirty per cent allowing the "department heads and supervisors" to make the presentation. The fact is brought out that the majority of the activities are circumventing the supervisor in this im-

portant duty. Seinwerth (13, p.111) in regard to award presentations, states:

...It is desirable for top management to be present at award ceremonies when the size of the awards is outstanding but this does not necessarily mean that top management should make the actual presentations. Give this pleasant assignment to the suggester's own boss. It makes the boss feel that he is an integral part of the suggestion plan. It gives him another opportunity for pleasant constructive contacts with his employees.

This question also brought out the fact that the award is presented in the "office of the Commanding Officer" by 53% of the one hundred-four activities replying; in the "work place" by 32%; in "public assemblies" by 11%; and in 4% of the activities, the award is sent to the suggester through "the mail accompanied by a letter." It is interesting to note that in only 43% of the activities is the suggester given a feeling of importance and pride in a situation where his fellow workers may observe the ceremony. In regard to the promotional advantages of award presentations, Seinwerth (13, p.111) further adds: "...If an employee is presented with an award in his department by his boss with the supervisor or general manager looking on, you can be sure that this news goes through the company by the grapevine in a hurry. It's just another way of stimulating creative thinking and more suggestions."

Question 54, the last question on awards, asks: "Are high awards presented in a different manner from low awards?" The response indicated that 76% of the activities

said "no" and do not differentiate, while the remaining 24% answered "yes." Most of those answering in the affirmative stated that their general policy is for the commanding officer to present the high awards and the supervisor or head of department presents the low awards.

Question 58 asks: "Does your Suggestion Committee make it a practice of reviewing suggestions a year after they have been adopted to see if they are still in effect and to compare the actual savings with the estimated savings?" The majority, 89%, of the one hundred twenty-two activities replying, said "no." Some of the comments volunteered by this group follow:

No, but it seems like an excellent idea.

Not sufficient personnel to do this.

This was formerly done, however, personnel and workload do not permit at this time.

No, but will do this in the future.

Idea is now under consideration.

Only thirteen activities actually have this policy in effect and evidently feel as does Seinwerth (13, p.66), who says:

It is a good practice to review all suggestions a year after they have been adopted to see if they are still in effect and to compare the actual savings with the estimated. If it is found that the actual savings exceed the estimated savings, an additional award is paid the suggester... This one year review is an excellent means of checking estimates for accuracy.

Table XII shows the response to question 66, which asks: "Which of the following records do you maintain to assist you in administering the program?" The three most

popular records used by the activities replying are: serial number file, alphabetical name file, and a subject file.

The practice of the majority of Naval activities is the same as recommended by Denz (1, p.28), who says: "The permanent records that should be maintained in the suggestion plan are a record of every award winner and a record of all suggestions by subject."

5. Promotion. The area of the study concerned with Promotion is composed of questions: 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 34, and 37.

The first question, number 19, under the heading of Promotion, asks: "Have you published an Employee Suggestion Handbook or Manual?" One hundred twenty-three activities replied to this question, 79% of which said "no." Many activities made comments and the following are typical of those volunteered:

No, but it is an excellent idea.

Considered desirable but not implemented due to lack of funds.

No, but we are in process of doing so.

Yes, only recently published. The handbook has aroused excellent response and it is believed that it is a very necessary implement.

Yes, out of print - not essential.

Only 21% of the activities replied "yes" and evidently feel that the handbook is helpful as does Osborn (11, p.277), who states:

The basic promotional tool should be an attractive booklet which tells employees

what the suggestion system is, how it works, what they've got to gain, and so on. This booklet should be something more than a few drab pages. It should be lively and compelling like the one published by B. F. Goodrich, which increased the volume of suggestions by nearly 85 per cent after it first appeared.

The NASS survey of 1949 determined that 49% of all companies surveyed published a handbook for their employees (8, p.28). The Navy, with its 21%, is noticeably more deficient in this respect than is industry as a whole.

Question 20 asks: "Do you make it a practice of explaining the suggestion program to new employees during indoctrination classes?" Only one activity did not reply to this question; of those responding, 68% replied "yes" and 32% said "no." Question 21, also on the subject of training, asks: "Do you make it a practice of explaining the suggestion program to the older employees during training programs?" All activities except one replied; 82% of them said "yes", and the remainder said "no." In both cases, the majority of Naval activities do explain the suggestion program to their employees by educational and training programs. Denz (1, p.3) also realizes the importance of this. He says that the lack of success of suggestion programs has been attributed to: "...lack of an educational program to teach employees how to submit quality suggestions." It was found that none of the largest activities in Size Group E answered "no" to either of the above questions. This indicates that those activities with many employees are more apt to have educational

and training programs than the smaller activities.

"Do you utilize local naval publications to publicize the suggestion program and give publicity to individuals who have received awards for their ideas?" is the wording of question 22. Fifty-eight per cent, the majority of the Naval activities, replied "frequently"; thirty-one per cent said "occasionally"; and only eleven per cent answered "rarely or never." This indicates that the majority of activities see the need for publicizing the program and stimulating participation. The results indicated that none of the larger activities in Size Group E, nor the aviation activities in Function Group I, replied "rarely or never" to this question.

Table VII shows the results of question 23 with regard to the number of posters supplied and used. The question asks: "How many posters does the Navy Department Beneficial Suggestion Board supply to your activity each month? How many of these do you actually use? Do you supplement these posters with some of your own?" The average number of posters supplied to all activities is 18.1; and the average number used is 17.4. The comments received indicated that some activities did not receive any posters from the Navy Department and others did not receive the posters regularly. Some typical comments are:

Navy Department posters have not been received monthly recently.

Receive posters every three months.

Receive posters every two months.

Posters are not received regularly.

We receive no monthly posters.

None available.

Eighty per cent of the activities said "no", that they did not supplement these posters with any of their own; the remaining twenty per cent answered "yes" to the question.

Question 24 asks: "What additional incentives do you use to stimulate the Suggestion Program?" The results from this question are presented in Table XIII. It was shown that the "bulletin board notice" was the most popular method of stimulating the program by the 120 activities answering the question.

The next two questions in the area of the study on Promotion are concerned with suggestion contests. Question 25 reads: "Have you previously conducted suggestion contests?" A large majority, 89%, of the activities answered "no", indicating that this method of promoting participation has not been actively used. The NASS survey for 1949 determined that the general feeling of the companies surveyed, with regard to contests, would seem to be that they do not have an important place in suggestion activity (8, p.27f). On the other hand, to question 26, which asks: "Whether or not you have previously conducted suggestion contests, do you feel they are useful in stimulating participation?", the majority, 55%, answered "yes"; 35% were "undecided"; and 10% said "no" they did not feel they were useful. This finding was in direct opposition to the results of the survey of 306 industrial companies, in which the majority answered "no"

to the same question (8, p.27)

Question 27 asks: "Do you provide information in writing to your employees indicating the names of persons who should be contacted if advice or help is needed in developing and presenting ideas?" The response to the question indicates that a clear dichotomy exists between the 124 Naval activities replying - 50% answered "yes" and 50% said "no."

The next question, number 28, concerns the need for 'thought provokers.' It reads: "Do you periodically describe to all employees special problems which are bothering the functions of your activity, in order to provoke thought in a certain direction?" Only 10% of the activities said "yes" to this question, the remaining 90% replied "no." The results indicate that only a small minority of the Naval activities feel, as does Osborn (11, p.279), that there is need for thought provokers. He states: "When creative thinking is thus focused, the quality as well as the quantity of suggestions is likely to increase. After all, our imaginations must have bones to gnaw upon." Many of the 110 activities that answered "no" to the question volunteered comments which can be voiced in the statement of one activity: "Excellent idea, will do this in the future." This indicates that many recognize the need for doing this but haven't as yet put it into practice.

Another question, number 37, further covers the need for encouraging creative thinking and will be discussed out of turn at this point. It asks; "Does the Recorder keep

a file of problems needing solution in order to provide useful material for thought provoking articles, posters, and talks?" Eighty-seven per cent, or 105 activities, answered "no", and thirteen per cent, or 16 activities, replied "yes" to the question. However, it is interesting to note that a great many activities submitted comments stating, in fact, that they thought it was a good idea and would encourage their Recorders to do this in the future.

Question 34 asks: "Is the Suggestion Committee, at your activity, carrying out an active, well planned promotional program to maintain continuous employee interest?" Only 17% of the one hundred twenty-one activities replying to this question answered "yes." The majority, 59%, replied "to a moderate extent"; and the remaining 24% said "no."

As we previously noted, under Attitude, Gates (5, p.1137) believes that one of the causes of indifference to the program on the part of employees is, "Improperly planned routines." The point covered by this question, about which so many of the activities have admitted being careless, could well be the reason that the results to question 11 indicated that the majority of Naval activities believe they are faced with an attitude of indifference among their employees.

6. Performance. The final area of the study concerned with Performance is composed of questions: 61, 62, 63, 64, and 65. Question 67, from the General area of the study, will also be discussed in the last part of the discussion of results.

Question 61 is the first question under the heading of Performance and asks: "What has been the highest award, including initial and additional awards, paid at your activity for any one suggestion to date? What was the amount of estimated annual savings for the first year of operation of this suggestion?" The replies to the question indicated that the highest award granted for a suggestion was \$10,000, presented to a Bureau of Ordnance employee on February 27, 1929. The suggestion concerned the invention of a variable delay fuse, the benefits of which cannot be considered as money saving, but rather as a scientific ordnance improvement. Table XIV shows the average maximum awards and resulting first year's savings for suggestions with tangible benefits in the 61 activities replying, by Function Groups. Table XV also refers to awards and shows the per cent of maximum awards by amount in each Function Group.

The results of questions 62 and 63 are presented in Tables VI and XVI. Table XVI shows the percentage of women employees in each Function Group. With regard to the potential creative thinking of women to men, it was found by the Johnson O'Connor Foundation that their average creative talent is definitely higher than the average man's, if the criteria are acceptable. As a result of seven hundred-two tests of women, it was determined that the female is as much as twenty-five per cent ahead of the male in relative creativity (11, p.21). This study of civilian employees in the Navy can neither prove nor disprove this statement that women have

greater inventive minds. It will be seen in Table XVI that Function Groups IV and V, which have the greater percentage of women employees, include activities of a non-productive nature in which the opportunity to suggest is more limited; therefore, no conclusion can be drawn.

Table XVI shows two methods of computing participation. Column 4 shows the method of computing the participation rate which is now in use in the Navy. It is based on the number of suggestions received and therefore the answer of 14.7 does not represent the actual number of individual employees who submitted suggestions during the fiscal year 1941. Column 5, however, has been termed the "corrected participation rate" because it is based on the actual number of individual suggesters, which is usually less than the number of suggestions received. This corrected method reveals that the true rate of participation is actually only 10.8, which is appreciably lower than the previously computed rate of 14.7. The Table shows that Function Group II had a high participation rate of 25.6; and, when the corrected rate of participation was computed, it dropped to a rate of 20.2. This discloses that about one employee out of five actually submitted suggestions; whereas, the method of computation now in use would lead to the belief that one employee out of four submitted suggestions. The difference, of course, is accounted for by the many employees who submitted more than one suggestion.

As pointed out, Function Group II has a high partici-

participation rate and is two to six times as high as the other Groups. The other activities, however, can lower the overall rate to the extent that the Navy does not compare too favorably with industry on this point. Becton (3, p.58), as a result of his comparative study of the Navy Program with the systems in industry, stated: "The Navy's participation rate is extremely low in comparison with the sample of industry covered in this survey."

Question 64 inquires: "What is the trend of your 1949 participation as compared with the same period in 1948?" The response to this question shows that 48% indicated their trend is "upward"; 29% said their trend is "down"; and 23% show "no change" in trend. The activities that indicated a downward trend were not clustered in any one Group, but were representative of all Groups.

The last question in the area of Performance, number 65, asks: "Indicate the approximate percentage of the total suggestions received in fiscal year 1949 which come under the categories of: Technical, Mechanical, Administration, Production, and Clerical." This was not answered by most activities and will not be discussed. It is felt that there were too few categories for expressing the nature of all suggestions, such as those pertaining to safety, improved methods, etc. Many activities found it difficult or impossible to segregate their suggestions into the five categories offered with the question.

Question 67 asks: "It is recognized that some of

the questions in this survey may be regarded as leading questions. Have they given you any ideas which you intend to adopt in the future administration of your Beneficial Suggestion Program?" In answer to this question, 55% of the one hundred twenty activities replying, answered "yes." This was gratifying to the writer, because it is felt that this study will have been all the more worthwhile if it has stimulated thinking toward the Suggestion Program, in the majority of the Naval activities participating in the study. Many of the activities mentioned that the following questions were the most helpful in giving them ideas which will be beneficial in furthering their programs; the questions are: 17, 19, 20, 23, 25, 26, 27, 28, 31, 37, and 58.

Most activities offered comments in the space provided at the end of the questionnaire. Some of the remarks will be quoted below:

The questionnaire suggests ideas for further developing the Beneficial Suggestion Program. It has likewise created further thinking which should result in an improved progressive promotional program.

One of the main faults of the program is lack of adequate top level backing. Too often the chairmen and the recorder are given the administration of this program as additional duty, where in reality it is a full time job to do a proper job. Vigorous prosecution and complete publicity would return a far higher net savings than is now realized, and employee relations would improve. Further, the award scale should not penalize an employee who makes a suggestion saving a large amount of money.

The value of the suggestion program is completely dependent upon confidence and interest by top management. There is no better means

to obtain, at a minimum cost, methods and ideas that will contribute to safety, efficiency and morale.

The most serious deficiency in the administration of suggestion programs is the attitude of management. Most installations accept the program as a necessary nuisance and allocate a minimum amount of time to its administration.

Due to the current deactivation it is expected that the receipt of suggestions will be substantially reduced.

Plans are being formulated to operate the program more vigorously.

It is felt that the Beneficial Suggestion Program has been very valuable to this activity mainly as a factor in good human relations.

It is now recognized that the success of such a program is primarily dependent upon the publicity given to it and the personal interest of the supervisors and Industrial Relations Department given to encouraging participation.

Reduced personnel complement and budget discourages training supervisors and putting program over to those potential suggesters.

A sense of insecurity brought about by several reductions in force during the last six months of the calendar year 1949 are believed to have adversely affected employees interest and participation in the Beneficial Suggestion Program.

Reduced ceiling in personnel office precludes any type of extra curricular activity.

Beneficial Suggestion Programs are successful to the extent that they are understood and stimulated by supervisory personnel. The suggestion program is inevitably a reflection of the quality of the supervisor at the installation.

The Beneficial Suggestion Committee in reviewing this questionnaire have found it very helpful for coordinating future beneficial suggestion programs.

These concluding comments are representative of all the Naval activities that participated in this survey. A great

many of the remarks show that the activities realize that a Suggestion Program cannot retain its effectiveness without continued and enthusiastic support of the management personnel responsible for the program at each activity. Gates (5, p.1188) also brought out this point when he said: "Management must be conscientiously and unselfishly interested in the plan if it expects the employees to support it by their effective participation."

An activity mentioned that the success of the program is dependent on the personal interest given by the supervisors in encouraging participation. This is very true because we previously gathered from Katz that although the suggestion system was introduced in order to correct the fact that the communication process has broken down, it is not solving the problem (4, p.149). The success is therefore partly dependent on the supervisor himself. Osborn (11, p.275) also feels that this point is important and states:

The attitude of the supervisory force can make or break a suggestion system. When a worker fails to volunteer ideas it is often because he is afraid to 'go over the head' of his foremen. Some supervisors against their own good, have actually discouraged participation. Many companies find that the most and best suggestions come from those departments which are headed by men who not only encourage but actually help their people to submit ideas.

The activity that commented that the program had been very valuable "as a factor in good human relations", indicates that some activities feel as do Mosher and Kingsley. They (7, p.542) state: "In the final analysis, personal administration is a matter of proper human relations and the operation

of the suggestion system offers unique opportunities for developing such relations."

The suggestion system offers unique opportunities for developing such relations. It provides a means by which employees can contribute their ideas and suggestions to the improvement of the organization. This system is designed to encourage and reward employees for their creative contributions. It is a simple and effective way to foster a sense of ownership and responsibility among the workforce. The system is based on the principle that every employee has the potential to make a valuable contribution to the organization. By providing a formal channel for the submission and consideration of suggestions, the organization can tap into this potential and benefit from the ideas and suggestions of its employees. The system is designed to be fair and equitable, and to provide a clear and simple process for the submission and consideration of suggestions. It is a key element of a comprehensive employee involvement program, and it is essential for the success of any organization that seeks to improve its performance and productivity.

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SUMMARY AND CONCLUSIONS

Summary. The first full fledged suggestion system in the United States was initiated in 1918 by the United States Navy. The Navy Beneficial Suggestion Program has expanded to the extent that the Navy is now one of the leading governmental agencies in the operation of employee suggestion programs. An extensive survey has never been made of all the Naval activities conducting Suggestion Programs for the purpose of obtaining facts and opinions regarding the administrative techniques employed within each activity in conducting its own program.

This study has attempted to determine the differences existing in the administrative techniques used by the many Naval activities conducting Beneficial Suggestion Programs. In order to gather facts and opinions regarding the techniques used, a questionnaire was devised and distributed to 152 Naval activities known to have had a Suggestion Program in effect during the fiscal year 1949. The questionnaire was composed of sixty-seven questions based on six areas of the study, as follows: (1) General, (2) Attitude, (3) Policy, (4) Procedure, (5) Promotion, and (6) Performance. Completed questionnaires were returned by 125 activities; this was 82.2% of the 152 questionnaires which had been distributed.

The results of the survey show that numerous differences are to be found in the administrative techniques used in conducting the Beneficial Suggestion Program at the 125 activities participating in the survey. Some of these

variances are in direct opposition to existing instructions, possibly due to a difference of interpretations. Other variances are peculiar to the size and function of the activity.

Conclusions. On the basis of the results of the survey obtained in this study, the following conclusions are made:

1. The greater majority of the Naval activities surveyed desire that military personnel, either enlisted or officer, should enjoy the same privilege as civilian employees with regard to receiving cash awards for suggestions adopted.

2. Some activities find it difficult to determine whether or not some of the suggestions submitted represent a part of the normal requirements of the duties of the suggester's position.

3. The great majority, 93%, of the activities participating feel that the Beneficial Suggestion Program is worth all the effort and time expended administering it. Those few activities that felt the program was not worthwhile also said they would not continue to conduct a program if given their own choice.

4. A total of sixty-four per cent of the activities believe they are faced with an attitude of indifference toward the Suggestion Program among their employees.

5. The Navy's sliding scale for cash awards, commencing at 5% of the first year's savings, is exceedingly low in comparison with the awards permitted by civilian com-

panies in industry, commerce, or finance. The most universally used percentage is a straight 10% of the first year's savings.

6. The majority of all activities surveyed use "net savings" in governing the cash awards to civilians for beneficial suggestions which are adopted. This is contradictory to the intent of the Office of Industrial Relations that all activities will base awards on "gross savings." Existing instructions on the matter are neither clear nor specific.

7. Nine activities have less than five members constituting their Beneficial Suggestion Committees. This is in violation of existing instructions.

8. The great majority of activities do not have any satisfactory procedure, method, or guide for determining the value of suggestions involving intangible benefits.

9. Most of the smaller activities do not supplement the cash award with some other form of recognition. On the other hand, the great majority of the larger activities have recognized that there exists on the part of employees a real desire for, and appreciation of, an additional emblem of recognition.

10. Less than half of the activities with over five thousand civilian employees see fit to assign a full time Recorder exclusively to the function of administering the activity suggestion program.

11. In only slightly more than one-third of the

activities is a suggester notified by personal contact that his suggestion has been rejected. The Office of Industrial Relations has indicated in NCFI 25 that the personal contact method is preferable; however, the majority of activities do not follow this procedure.

12. The majority of awards are presented by the Commanding Officer of the activity, in his office. It is evident that most activities do not realize that it is desirable for the suggester's own boss to present the award in a situation where his fellow workers may observe the ceremony.

13. Only about one out of every five activities surveyed has published a Suggestion Handbook or Manual for their employees. The Navy is noticeably more deficient in this respect than is industry as a whole where about half of all companies publish handbooks for their employees.

14. Very few of the activities surveyed could state that their Suggestion Committees were carrying out active, well planned promotional programs to maintain continuous employee interest.

15. It is necessary to educate the supervisory personnel in order that they will understand and stimulate the program. It is only by so doing that the program will be successful both from a standpoint of monetary savings, improved human relations, and as a successful channel of communications between workers and the supervisors.

Recommendations. In order to correct certain

deficiencies existing in the Navy Beneficial Suggestion Program as a whole, the following recommendations are offered:

1. Specific legislative recommendations should be requested from the committee in the Personnel Policy Board which has been established to study the matter of presenting cash awards to military personnel for suggestions adopted.

2. The eligibility clause, which states that suggestions are not eligible for cash award consideration if they represent a part of the normal requirements of the duties of the suggester's position, should be clarified. The activities should be made cognizant of the fact that eligibility differs within each type of organization; and it is up to the individual activity to formulate their own eligibility provisions and see that they are promulgated to their employees.

3. Each activity should be strongly encouraged, perhaps ordered, to investigate their individual programs for the existence of: a. Poorly introduced system; b. Improperly planned routines; c. Lack of interest on the part of management; d. Hostility or indifference of supervisors; and e. Delay in considering suggestions. Any of the above discrepancies which are found should be corrected in order to help eliminate an attitude of indifference toward the Suggestion Program among their employees.

4. Executive Order 9817 of December 31, 1946 should be revised in order to allow for higher cash awards

to be presented to civilian employees of the Navy for constructive suggestions which are adopted. It is recommended that the awards be based on a straight 10% of the first year's savings. Genius is inspired by the thought of an adequate reward for efforts expended as well as for patriotism.

5. The instruction in NCPI 25 regarding the type of savings to be used in governing cash awards should be clarified. It should also state specifically that "gross savings" are to be used.

6. The next revision of NCPI 25 should include a guide to assist activities in the evaluation of intangible suggestions. It should be similar to the criteria presented for that purpose in the Air Force Civilian Personnel Manual and the Army Civilian Personnel Regulations.

7. All activities, and especially the smaller, should be more strongly encouraged to supplement the cash award with other forms of recognition which can be retained by the suggester after the cash award has been spent.

8. All Naval activities conducting Suggestion Programs should be strongly impressed with the resultant advantages of using as many personal contacts as possible in the administration of the Program. They should be discouraged from handling everything with form letters or written communications.

9. In order to give the first line supervisors more opportunities for pleasant constructive contacts with their employees, it would be desirable to encourage individual

activities to allow the suggester's own boss to make the actual award presentation. This should be done in full view of his fellow workers, with the Commanding Officer or his representative looking on. By so doing, the desirable human relationships between the rank and file and the supervisors would be strengthened; and the problem of the communication process between supervisor and worker would be lessened by the Suggestion Program.

10. The publication of a Suggestion Handbook or Manual to all employees is a method of stimulating interest in the program which should be suggested to all Naval activities conducting Suggestion Programs.

11. All activities should be encouraged to see that their Suggestion Committees carry out active, well planned promotional programs in order to maintain continuous employee interest.

REFERENCES

1. American Management Association. Getting and using employee's ideas. Production Series Number 165. New York. 1946.
2. Army and Navy Journal, Inc. Army and Navy Journal. Washington, D.C. August 27, 1949.
3. Becton, Frederick J. Comparative study of private industrial and the navy suggestion and award systems for both civilian and military personnel. Unpublished Master's Thesis, Northwestern University, 1948.
4. Dennis, Wayne. Current trends in industrial psychology. Pittsburgh, Pennsylvania: University of Pittsburgh Press, 1949.
5. Donald, W.J. Handbook of business administration. New York: McGraw-Hill Co., Inc., 1931.
6. Feldman, Herman. Readings in industrial relations and personnel management. Hanover, New Hampshire: Dartmouth Printing Co., 1947.
7. Mosher, William E. and J.D.Kingsley. Public personnel administration. New York: Harper and Brothers, 1941.
8. National Association of Suggestion Systems. NASS Quarterly. Chicago. December 1949.
9. National Association of Suggestion Systems. Suggestion systems. Chicago. 1944.
10. Navy Department. Navy Civilian Personnel Instructions. Instruction 25. Washington, D.C. January 4, 1949.
11. Osborn, Alex. Your creative power. New York: Charles Scribner's Sons, 1949
12. Roethlisberger, F.J., and W.J.Dickson. Management and the worker. Cambridge, Massachusetts: Harvard University Press, 1946.
13. Seinwerth, Herman W. Getting results from suggestion plans. New York: McGraw-Hill Co., Inc., 1948.
14. Wilhelm, Donald, Jr. An employee suggestion system for the small plant or store. Washington, D.C.: Department of Commerce. 1946.

Address reply to
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NAVY DEPARTMENT

WASHINGTON 25, D. C.



10 Nov 1949

CIRCULAR LETTER

From: Secretary of the Navy
To: Chief of all Bureaus and Offices, Navy Department
Commandant, U. S. Marine Corps
Subj: Navy Department Beneficial Suggestions Program

1. I am gratified to announce that the Department of the Navy was awarded a plaque by the National Association of Suggestion Systems at the convention in Cleveland, Ohio, on 25 October, for being the government establishment that showed greatest increase in participation by its civilian employees in the Beneficial Suggestions Program during the calendar year 1948.
2. During the period specified, Navy employees submitted 38,673 suggestions, as compared with 28,029 the year before. Of the suggestions submitted, 10,870 were deemed worthy of adoption and resulted in annual savings of \$8,818,396 plus such intangible but important benefits as higher morale, improved employee relations and increased cooperation. Awards totalling \$270,668 were made by naval activities for these suggestions.
3. I do not consider this \$270,000 award for beneficial suggestions as a permanent expenditure from naval appropriations. I do not even consider that it is properly lodged as an offset against the eight and three quarter million dollars saved. Rather, I look upon it as seed which we have sown in a fertile field with not only the expectancy, but the certainty, that we will reap hundreds of times over if we properly cultivate the field.
4. In this day of shrinking appropriations it is more than ever important that we obtain for the country the utmost in defense for every Navy dollar expended. The Beneficial Suggestions Program has proved itself, not only in the Navy, but throughout industry. I suggest that you cause a check to be made of the effectiveness of the Beneficial Suggestions Program in the various activities under your management control, and take appropriate steps to insure that the Navy will reap the benefit of all of its employees' ideas for improvement.

Francis P. Matthews

FRANCIS P. MATTHEWS

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NROTC UNIT
NORTHWESTERN UNIVERSITY
EVANSTON, ILLINOIS

29 December 1949

From: LCDR. Ralph V. WILHELM, 83179/1310, USN
To:

Subj: Questionnaire concerning Navy Beneficial Suggestion Program;
request for completion of

Encl: (1) Two copies of Questionnaire.

1. It is requested that one copy of the questionnaire, enclosure (1), be completed and returned to me in the enclosed self-addressed envelope prior to 20 January 1950.

2. All naval activities conducting Beneficial Suggestion Programs are being surveyed. I am conducting this study for, and with the approval of, the Navy Department as part of my required work as a graduate student of Personnel Administration and Training at Northwestern University.

3. The purpose of this survey is to obtain facts and opinions from you regarding the Beneficial Suggestion Program being conducted within your activity.

4. The questionnaire can be answered by simply checking the appropriate blank, or by a word or sentence. The second copy of the questionnaire may be retained for your files if desired.

5. Upon completion of the study all questionnaires will be destroyed. I assure you that your reply will be treated as CONFIDENTIAL and only the summarized results of all activities will be revealed. It is requested that you indicate the name of the activity but you need not sign your name unless you so desire.

6. Your cooperation and promptness in filling out this questionnaire will be greatly appreciated.

R. V. WILHELM

QUESTIONNAIRE

(Upon completion of the study, this questionnaire will be destroyed. Your reply will be treated as CONFIDENTIAL and only the summarized results of all activities will be revealed. If more space is required, use reverse side.)

1. Name of activity: _____
2. Date your Beneficial Suggestion Program was started: _____
3. Do you feel that the opportunities for your employees to make suggestions is more limited in your activity than in others?
- 3.1 _____ Yes. If yes, state why: _____
- 3.2 _____ No _____
4. In your opinion how effective is the Beneficial Suggestion Program at your activity?
- 4.1 _____ Very poor
- 4.2 _____ Below average
- 4.3 _____ Satisfactory
- 4.4 _____ Better than average
- 4.5 _____ Excellent
5. Do you feel that the suggestion program at your activity is worth all the effort and time expended administering it?
- 5.1 _____ Yes
- 5.2 _____ No
- 5.3 _____ Undecided
6. If you had your choice, would your activity continue to conduct a Beneficial Suggestion Program?
- 6.1 _____ No
- 6.2 _____ Undecided
- 6.3 _____ Yes
7. Would you recommend that the commanding officers of individual activities be empowered to approve payment of awards higher than \$275.00 for any one suggestion?
- 7.1 _____ Yes. If yes, up to what amount? \$ _____
- 7.2 _____ No
8. Do you recommend that all personnel in uniform participate in the Suggestion Program on an equal basis with civilian employees?
- 8.1 _____ Yes
- 8.2 _____ Enlisted Personnel only
- 8.3 _____ No
9. The present instructions provide that "no award shall be paid to any officer or employee for any suggestion which represents a part of the normal requirements of the duties of his position." Do you feel that this, to a certain extent, restricts the number of possible good suggestions?
- 9.1 _____ Yes. If yes, explain. _____
- 9.2 _____ No _____

- 10. To your knowledge, have you ever had an employee attempt to keep an idea or an invention a secret with the intention of using it for personal advantage or selling it for more elsewhere?
 - 10.1 Yes
 - 10.2 No

- 11. Do your employees have the attitude of indifference toward the Suggestion Program?
 - 11.1 Yes
 - 11.2 To a moderate extent
 - 11.3 No

- 12. Do you feel that the limit of good suggestions from your employees has just about been reached?
 - 12.1 Yes
 - 12.2 No

- 13. If the relation between labor and management were considered to be harmonious to a high degree, do you feel that suggestions would still be forthcoming without the use of a formal suggestion system and promise of award?
 - 13.1 No
 - 13.2 Yes

- 14. What is the primary objective of the Suggestion Program at your activity?
 - 14.1 Monetary savings
 - 14.2 Improved industrial relations
 - 14.3 Other (state) _____

- 15. Which do you consider to be the most important?
 - 15.1 Techniques used in giving recognition to good ideas
 - 15.2 Techniques used in rejecting suggestions
 - 15.3 Consider them of equal importance

- 16. To what extent has the suggestion program contributed to the success of good employee relations at your activity?
 - 16.1 None whatsoever
 - 16.2 Very little
 - 16.3 To a moderate degree
 - 16.4 A great deal

- 17. Do you guarantee to all employees, in writing, that no one shall lose his job or have his pay cut because of a suggestion made by him or another worker?
 - 17.1 No
 - 17.2 Yes

- 18. Does your activity use the number and quality of proposals from each employee as factors to be considered in raising wages and in making promotions?
 - 18.1 Yes
 - 18.2 No

- 19. Have you published an Employee Suggestion Handbook or Manual?
 - 19.1 Yes
 - 19.2 No

- 20. Do you make it a practice of explaining the suggestion program to new employees during indoctrination classes?
 - 20.1 No
 - 20.2 Yes
- 21. Do you make it a practice of explaining the suggestion program to the older employees during training programs?
 - 21.1 Yes
 - 21.2 No
- 22. Do you utilize local naval publications to publicize the suggestion program and give publicity to individuals who have received awards for their ideas?
 - 22.1 Frequently
 - 22.2 Occasionally
 - 22.3 Rarely or never
- 23. How many posters does the Navy Department Beneficial Suggestion Board supply to your activity each month? _____ How many of these do you actually use? _____ Do you supplement these posters with some of your own?
 - 23.1 No
 - 23.2 Yes
- 24. What additional incentives do you use to stimulate the Suggestion Program?
 - 24.1 Bulletin board notice
 - 24.2 Publicity in activity organ
 - 24.3 Direct mail
 - 24.4 Personal contact
 - 24.5 Other (state) _____
- 25. Have you previously conducted suggestion contests?
 - 25.1 Yes
 - 25.2 No
- 26. Whether or not you have previously conducted suggestion contests, do you feel they are useful in stimulating participation?
 - 26.1 No
 - 26.2 Undecided
 - 26.3 Yes
- 27. Do you provide information in writing to your employees indicating the names of persons who should be contacted if advice or help is needed in developing and presenting ideas?
 - 27.1 Yes
 - 27.2 No
- 28. Do you periodically describe to all employees special problems which are bothering the functions of your activity, in order to provoke thought in a certain direction?
 - 28.1 Yes. If yes, how? _____
 - 28.2 No _____
- 29. How many suggestion boxes does your activity maintain? _____ How often are suggestions collected from the boxes? _____

- 30. In what manner is the suggester able to transmit his suggestions to the Committee?
 - 30.1 Suggestion boxes
 - 30.2 U.S. Mail
 - 30.3 Office or shop mail systems
 - 30.4 Other (state): _____

- 31. Some commercial Suggestion and Award Systems allow the suggester to remain anonymous, if he so desires, rather than require him to identify himself. Do you believe such a plan would work more efficiently in your activity than the present system?
 - 31.1 No
 - 31.2 Yes

- 32. How are your investigations handled?
 - 32.1 Full time investigators
 - 32.2 Part time investigators
 - 32.3 Supervision
 - 32.4 Technical or Staff
 - 32.5 Other (state) _____

- 33. Do you allow the suggester to sit in as an observer in the meetings of the suggestion committee?
 - 33.1 Yes
 - 33.2 No

- 34. Is the Suggestion Committee, at your activity, carrying out an active, well-planned promotional program to maintain continuous employee interest?
 - 34.1 No
 - 34.2 To a moderate extent
 - 34.3 Yes

- 35. How many persons constitute your Beneficial Suggestion Committee? _____
 - How many are civilians? _____ Naval officers? _____
 - How many represent management? _____
 - How many are employee representatives? _____

- 36. How long do committee members serve? _____

- 37. Does the Recorder keep a file of problems needing solution in order to provide useful material for thought provoking articles, posters and talks?
 - 37.1 Yes
 - 37.2 No

- 38. In your activity, when an idea is accepted by the suggestion committee and put into effect, does its adoption become mandatory for all designated departments?
 - 38.1 No
 - 38.2 Yes

- 39. Does the Recorder devote himself exclusively to the function of administering the activity suggestion program?
 - 39.1 Yes
 - 39.2 No, only part time

40. Is the membership of the Suggestion Committee published to the employees?
 40.1 No
 40.2 Yes
41. How often does the Beneficial Suggestion Committee convene to consider suggestions? _____
42. A two year limitation period is used in the present Beneficial Suggestion Program. Do you feel that this limitation period should be changed?
 42.1 Yes. If yes, what limitation period do you recommend? ___
 42.2 No
43. In order to win the cooperation of supervisors, some commercial Suggestion and Award Systems provide for paying the foreman or superintendent a bonus based on the total number of ideas turned in by men under him, coupled with ample publicity for him as well as for his men. Would you recommend that this policy be adopted by the Navy Suggestion Program?
 43.1 No
 43.2 Yes
44. How are awards for suggestions with intangible benefits determined?

45. Do your employees sometimes use the Suggestion Program as an outlet for grievances, without also submitting a suggestion on how to improve the situation?
 45.1 Yes
 45.2 No
46. In your activity, what is considered a suitable time limit for the acknowledgement of suggestions? _____
47. What is the average length of time required in your activity for the processing of suggestions after receipt? _____
48. What procedure do you have for informing a suggester that his suggestion has been rejected?
 48.1 Notice on bulletin board
 48.2 Form letter
 48.3 Personal letter
 48.4 Personal interview
 48.5 Other (state) _____
49. How are suggesters notified of their awards?
 49.1 Notice on bulletin board
 49.2 Form letter
 49.3 Personal letter
 49.4 Personal contact
 49.5 Other (state) _____

50. Do you have a follow-up form or procedure to expedite the installation of a suggestion after it has been accepted?

50.1 Yes. If yes, what do you do? _____
50.2 No _____

51. Do you present the award to the suggester prior to the suggestion being put into operation?

51.1 No
51.2 Yes

52. In your activity are formal presentation ceremonies used in presenting awards?

52.1 Yes
52.2 No

53. Who presents the award? _____
Where is the award presented? _____

54. Are high awards presented in a different manner from low awards?

54.1 Yes. If yes, explain: _____
54.2 No

55. Do you feel that the cash awards as now provided are:

55.1 Too small
55.2 About right
55.3 Too high

If you feel that the present cash award should be increased or decreased, please indicate your recommendation below:

Estimated First Years Savings	Present Cash Award	Present Percent of First Years Savings	Recommended Percent of First Years Savings
\$1,000	\$50	5.00%	$\frac{1}{2}$ %
\$10,000	\$275	2.75%	$\frac{1}{2}$ %
\$100,000	\$725	0.72%	$\frac{1}{2}$ %
\$1,000,000	\$1,625	0.16%	$\frac{1}{2}$ %

56. On what type of savings do you base your award?

56.1 Gross savings
56.2 Net savings

57. Does your activity supplement the cash award with some other form of recognition?

57.1 Yes. If yes, explain: _____
57.2 No _____

58. Does your Suggestion Committee make it a practice of reviewing suggestions a year after they have been adopted to see if they are still in effect and to compare the actual savings with the estimated savings?

58.1 No
58.2 Yes

59. Has your activity ever adopted any suggestions that were developed at other naval activities?

59.1 Yes. If yes, how many? _____

59.2 No

60. At present, there are no provisions for cash awards for the adoption of a suggestion by other governmental agencies or departments. Should provisions be made whereby the suggester would receive cash awards from other departments in return for the use of the suggestion?

60.1 No

60.2 Yes

61. What has been the highest award, including initial and additional awards, paid at your activity for any one suggestion to date? \$ _____
What was the amount of estimated annual savings for the first year of operation of this suggestion? \$ _____

62. Please insert data as called for below:

1	2	3	4 *	5	6
For Quarter Ending	Number of Suggestions Submitted	Number of Suggestions Adopted	Number of Individual Suggesters	Number of Minimum Awards Paid (\$10.00)	Total Amount of Awards Paid
9-30-48					
12-31-48					
3-31-49					
6-30-49					

*Column 4 asks for the actual number of individual employees who submitted suggestions. If an employee submitted more than one suggestion, count him only once.

63. For fiscal year 1949:

63.1 What was the average number of civilian employees? _____

63.2 What percentage of the figure above represents women? _____%

63.3 What was the average cash award (initial plus additional)? _____

63.4 What was the percentage of adoptions resulting in tangible savings? _____%

64. What is the trend of your 1949 participation as compared with the same period in 1948?

64.1 Up

64.2 Down

64.3 No change

65. Indicate the approximate percentage of the total suggestions received in fiscal year 1949 which come under each of the following categories:

65.1 Technical _____% 65.2 Mechanical _____% 65.3 Administration _____%

65.4 Production _____% 65.5 Clerical _____%

66. Which of the following records do you maintain to assist you in administering the program?

- 66.1 Alphabetical Name File
- 66.2 Department File
- 66.3 Subject File
- 66.4 Award Winners File
- 66.5 Serial Number File
- 66.6 Other (state) _____

67. It is recognized that some of the questions in this survey may be regarded as leading questions. Have they given you any ideas which you intend to adopt in the future administration of your Beneficial Suggestion Program?

- 67.1 Yes
- 67.2 No

68. Remarks: _____

APPENDIX D

NUMBER OF ACTIVITIES THAT ANSWERED EACH QUESTION
AND PERCENTAGE OF ACTIVITIES THAT SELECTED
EACH RESPONSE IN EACH INDIVIDUAL QUESTION (a)

Question Number	Number Activities Answering	Possible Responses					
		.1	.2	.3	.4	.5	.6
3	125	33%	67%				
4	125	4%	15%	55%	22%	4%	
5	123	93%	2%	5%			
6	123	2%	5%	93%			
7	124	22%	78%				
8	122	57%	15%	28%			
9	125	40%	60%				
10	124	4%	96%				
11	124	8%	56%	36%			
12	122	9%	91%				
13	124	59%	41%				
14	96	50%	28%	22%			
15	123	12%	9%	79%			
16	122	2%	20%	61%	17%		
17	122	89%	11%				
18	117	21%	79%				
19	123	21%	79%				
20	124	32%	68%				
21	124	82%	18%				

APPENDIX D (continued)

Question Number	Number Activities Answering	Possible Responses					
		.1	.2	.3	.4	.5	.6
22	119	58%	31%	11%			
23	121	80%	20%				
24 (b)	120	80	67	11	64	31	
25	124	11%	89%				
26	125	10%	35%	55%			
27	124	50%	50%				
28	122	10%	90%				
30 (b)	121	96	49	97	54		
31	116	90%	10%				
32 (b)	120	12	50	45	51	23	
33	121	26%	74%				
34	121	24%	59%	17%			
37	121	13%	87%				
38	119	40%	60%				
39	123	8%	92%				
40	122	16%	84%				
42	120	9%	91%				
43	119	60%	40%				
45	124	36%	64%				
48 (b)	122	0	23	103	47	4	
49 (b)	121	11	19	87	70	5	
50	121	35%	65%				
51	117	72%	28%				

APPENDIX D (continued)

Question Number	Number Activities Answering	Possible Responses					
		.1	.2	.3	.4	.5	.6
52	122	87%	13%				
54	119	24%	76%				
55	124	31%	69%	0%			
56	116	44%	56%				
57	121	59%	41%				
58	122	89%	11%				
59	116	40%	60%				
60	121	18%	82%				
64	122	48%	29%	23%			
66 (b)	120	75	12	67	46	79	20
67	120	65%	35%				

- (a) Certain questions that did not offer a choice of responses have been excluded; responses to those questions will be found in the discussion of results.
- (b) Some questions asked for more than one answer and in these questions the actual number of times the response was selected will be shown rather than percentages.

Table 1

Experimental Conditions					Temperature (°C)	Pressure (atm)
Run	Time (min)	Flow Rate (ml/min)	Concentration (%)	Volume (ml)		
1	10	1.0	0.1	10	25	1.0
2	20	1.0	0.1	20	25	1.0
3	30	1.0	0.1	30	25	1.0
4	40	1.0	0.1	40	25	1.0
5	50	1.0	0.1	50	25	1.0
6	60	1.0	0.1	60	25	1.0
7	70	1.0	0.1	70	25	1.0
8	80	1.0	0.1	80	25	1.0
9	90	1.0	0.1	90	25	1.0
10	100	1.0	0.1	100	25	1.0
11	110	1.0	0.1	110	25	1.0
12	120	1.0	0.1	120	25	1.0
13	130	1.0	0.1	130	25	1.0
14	140	1.0	0.1	140	25	1.0
15	150	1.0	0.1	150	25	1.0
16	160	1.0	0.1	160	25	1.0
17	170	1.0	0.1	170	25	1.0
18	180	1.0	0.1	180	25	1.0
19	190	1.0	0.1	190	25	1.0
20	200	1.0	0.1	200	25	1.0

1. The first column shows the run number, and the second column shows the time in minutes. The third column shows the flow rate in ml/min, and the fourth column shows the concentration in percent. The fifth column shows the volume in ml. The sixth column shows the temperature in degrees Celsius, and the seventh column shows the pressure in atm.

2. The data in this table were obtained from a series of experiments conducted under the conditions specified in the first column. The results show that the reaction rate increases with time, and that the concentration and volume also increase over time. The temperature and pressure remain constant throughout the experiment.

APPENDIX E

A GUIDE FOR EVALUATING INTANGIBLE SUGGESTIONS
USED BY THE ILLINOIS CENTRAL RAILROAD

Amount of Award	Helpfulness (a)			Originality (b)		Application (c)	
	Minor	Major	Extreme	Common	Unusual	Local	General
\$ 5.00	X			X		X	
\$10.00		X		X		X	
\$10.00	X				X	X	
\$15.00	X				X		X
\$20.00		X			X	X	
\$25.00		X			X		X
\$30.00			X	X		X	
\$40.00			X	X			X
\$50.00			X		X		X
\$50.00 plus			X		X		X

- (a) "Minor", "Major", and "Extreme" are used to indicate the degrees of Helpfulness, that is, added convenience, improved working conditions, or extent of safety improvement.
- (b) "Common" and "Unusual" have been applied to Originality to differentiate between suggestions that propose a new application of a known idea and those that propose an actual new idea.
- (c) "Local" and "General" are the degrees of Application.

SOURCE: Illinois Central Railroad Employee's Suggestion System, "Guides for Evaluating Suggestions", p.2.

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Administration of the
beneficial suggestion program
for civilian personnel employed
by the United States Navy.

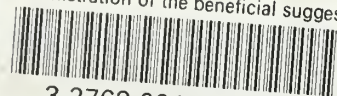
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